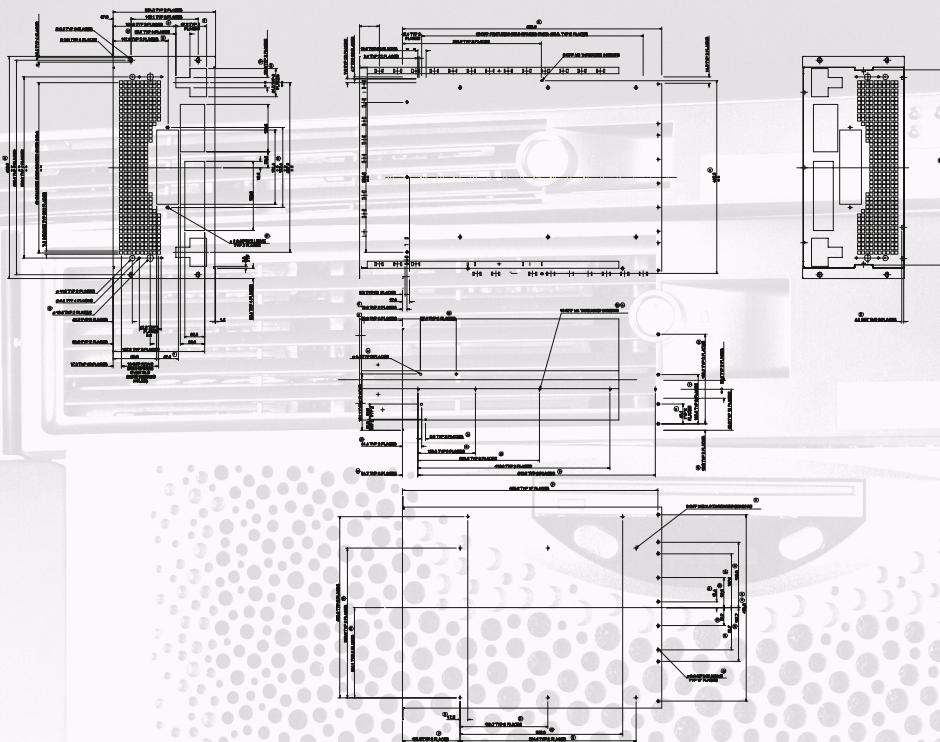


Clarity

Installation, Operational Testing and Maintenance Manual

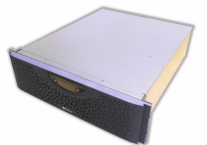
H059W003



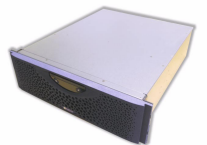
Clarity100 SD



Clarity200 SD



Clarity300 SD



Clarity3000 SD/HD



Clarity500 SD



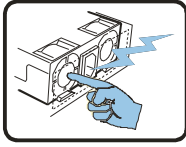
Clarity5000 SD/HD



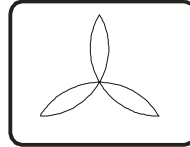
Clarityprep SD/HD



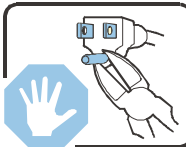
Important Safety Information



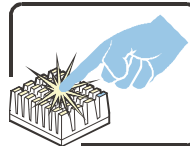
The power supply in this product contains no user-serviceable parts. There may be more than one supply in this product. **Refer servicing only to qualified personnel.**



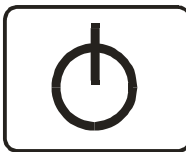
For proper cooling and airflow, always reinstall the chassis cover before turning on the system unit. **Operating a system unit without the cover in place can damage system parts.**



Do not attempt to modify or use the supplied AC power cord if it is not the exact type required. A product with more than one power supply will have a separate AC power cord for each supply.



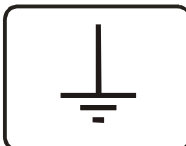
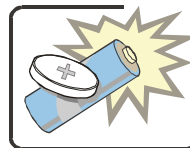
The microprocessor(s) and heat sink(s) may be hot if the system unit has been running. Also, there may be sharp pins and edges on some PCB and chassis parts. Contact should be made with care. Consider wearing protective gloves.



The power button on the system does not turn off system AC power. To remove AC power from the system, you must unplug each AC power cord from the wall outlet or power supply. The power cord(s) is considered the disconnect device to the mains (AC) power. The socket outlet that the system units plugs into should be installed near the equipment and should be easily accessible.



This product MAY contain a small non-rechargeable battery (if applicable). The average life span of this type of battery is approximately five years. Do not attempt to recharge, disassemble, or incinerate this type of battery. Keep all batteries away from children. Dispose of used batteries promptly and as regulated by applicable laws. Danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer.



This equipment must be suitably earthed. This equipment contains no user serviceable parts inside. Replace fuse only with same type and rating. Your warranty may be invalidated if fuses of an incorrect rating are used.

For further information on regulatory notices, equipment ratings, statements of conformity and recommended operating environments, refer to [“2. Regulatory Notices, Ratings and Warnings \[CLARITY\]”](#) for more information.

Clarity

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Draft G

May 2006

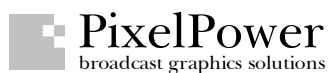
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Revision History

1. H059W003_Rev01_G, Draft G, May 2006

- a) Global changes include the addition of information regarding the new Clarity 3000 product.
- b) Added Clarity 3000 Style A rear panel electrical ratings and product name plate location.
Refer to [“2. Regulatory Notices, Ratings and Warnings \[CLARITY\]”](#) for more information.
- c) Added Clarity 3000 Style A rear panel and core product hardware features.
Refer to [“3.1 Product overview”](#) for more information.
Refer to [“3.3 Core product hardware features”](#) for more information.
- d) Added Clarity 3000 Style A rear panel and specification. Corrections to pinout numbering for Clarity 5000 44-pin high density (HD) female D-type connector (pin 13 now GPI 3; previously GPI 2) (pin 42 now GPI 2; previously GPI 3). Also added new pinout description for 62-pin high density (HD) female D-type connector used by Clarity 3000 H114 Interface Mezzanine.
Refer to [“4.4 Clarity 3000 STYLE A rear panel layout, specification and connectors”](#) for more information.
Refer to [“4.13 Connector descriptions”](#) for more information.
Refer to [“4.13.5.6 62-pin high density \(HD\) D-type female connector \(multi-purpose\)”](#) for more information.
- e) Added information regarding Clarity 3000 Style A dual-redundant 460W PSU cage (identical to Clarity 300).
Refer to [“5. Clarity Power Supply Units \(PSU\) \[CLARITY\]”](#) for more information.
- f) Added information regarding Clarity 3000 Style A installation including rear panel, PSU and peripherals, networking, RS232/RS422/GPI/GPO connection. Corrections to pinout mapping for Clarity 5000 44-pin breakout communication cable data (pin 13 now GPI 3; previously GPI 2) (pin 42 now GPI 2; previously GPI 3). Added new pinout mapping for 62-pin high density (HD) female D-type connector used by Clarity 3000 H114 Interface Mezzanine.
Refer to [“6.1.4.1.4 Clarity 300 STYLE A and Clarity 3000 STYLE A dual-redundant PSU cage”](#) for more information.
Refer to [“6.1.4.5 Clarity 3000 STYLE A peripherals, networking, RS232/RS422/GPI/GPO”](#) for more information.
- g) Added new Clarity 3000 connection schematic.
Refer to [“10. Clarity 3000 STYLE A Connection Schematic \[CLARITY\]”](#) for more information.
- h) Updated CG Tools installation and upgrade information.
Refer to [“13. Software Installation and Upgrade”](#) for more information.
- i) Added system monitoring information specific to Clarity 3000.
Refer to [“19. System Monitoring and Configuration \[CLARITY\]”](#) for more information.
- j) Added information relating to Clarity 3000 related PCB's (H111 Standard Definition (SD) and High Definition (HD) Input/Output (I/O) + Audio, H112 Standard Definition (SD) and High Definition (HD) Framestore CPU, H113 Disk Interface and H114 Interface Mezzanine). Also added Clarity 3000 PCB, disk drive and power supply locations.
Refer to [“20.1.2 Possible PCB utilisation depending on model and channel derivative”](#) for more information.
Refer to [“20.3.4 Clarity 3000 STYLE A \(clips/internal storage\)”](#) for more information.
Refer to [“20.30 H111 Standard Definition \(SD\) and High Definition \(HD\) Input/Output \(I/O\) + Audio”](#) for more information.
Refer to [“20.31 H112 Standard Definition \(SD\) and High Definition \(HD\) Framestore CPU”](#) for more information.
Refer to [“20.32 H113 Disk Interface”](#) for more information.
Refer to [“20.33 H114 Interface Mezzanine”](#) for more information.
- k) Added information regarding the connection of Clarity 3000 systems to an optional Chaparral 2RU SCSI external storage unit.
Refer to [“21.11.2 Installing an optional Chaparral 2RU SCSI external storage unit”](#) for more information

2. H059W003_Rev01_F, Draft F, February 2006

- a) Global changes include the addition of information regarding the new Clarity 5000 product and the re-ordering of product derivatives by numerical order rather than production date. Also removed hardware configuration information which is now documented in the CG Tools Reference (H059W004).
- b) Added important safety information at the front of this manual to make warnings and safety precautions immediately obvious to users.
Refer to [“Important Safety Information”](#) for more information.
- c) Added Clarity 5000 Style A rear panel electrical ratings and product name plate location.
Refer to [“2. Regulatory Notices, Ratings and Warnings \[CLARITY\]”](#) for more information.
- d) Added Clarity 5000 Style A rear panel and core product hardware features.
Refer to [“3.1 Product overview”](#) for more information.
Refer to [“3.3 Core product hardware features”](#) for more information.
- e) Added Clarity 5000 Style A rear panel and specification. Also revised structure of connector descriptions to avoid confusion. D-type connectors now grouped in "High Density" and "Standard Density" sections. Added dimensions and weights for RapidAction and RapidRecall keypads. Added information regarding revised RapidRecall keypad and related rear panel connectors. Corrections to pinout numbering for Clarity 100, 200 and 300 44-pin high density (HD) female D-type connector (pin 29 now RX-). Also added new pinout functions for 44-pin high density (HD) female D-type connector used on new H096 revision B PCB's (features enhanced GPO functionality; changes to functions of pins 15, 20, 21, 22, 23, 30 and 36).
Refer to [“4.12 Clarity 5000 STYLE A rear panel layout, specification and connectors”](#) for more information.
Refer to [“4.13 Connector descriptions”](#) for more information.
Refer to [“4.13.5.5 44-pin high density \(HD\) D-type female connector \(multi-purpose\)”](#) for more information.
Refer to [“4.14 Peripherals and related rear panel information”](#) for more information.
- f) Added information regarding Clarity 5000 Style A dual-redundant 500W PSU cage (identical to Clarity 500).
Refer to [“5. Clarity Power Supply Units \(PSU\) \[CLARITY\]”](#) for more information.
- g) Added information regarding Clarity 5000 Style A installation including rear panel, PSU and peripherals, networking, RS232/RS422/GPI/GPO connection. Also added information regarding new Clarity 5000 44-pin breakout communication cable data. Corrections to pinout mapping for Clarity 100, 200 and 300 44-pin breakout communication cable data (pin 29 now RX-). Revised pinout mapping for GPI/GPO/TALLY 15-pin female D-type connector to match production specification. Added new pinout mapping for 44-pin high density (HD) female D-type connector on new H096 revision B PCB's. This includes extra GPO functionality that utilises a 25-pin

-
- female D-type connector instead of a 15-pin female D-type.
Refer to [“6.1.4.1.9 Clarity 500 STYLE B and C and Clarity 5000 STYLE A dual-redundant PSU cage”](#) for more information.
Refer to [“6.1.4.13 Clarity 5000 STYLE A peripherals, networking and RS232/RS422/GPI/GPO”](#) for more information.
Refer to [“6.1.4.15 Clarity 100, 200 and 300 44-pin breakout communication cable data”](#) for more information.
 - h) Added new Clarity 5000 connection schematic.
Refer to [“12. Clarity 5000 STYLE A Connection Schematic \[CLARITY\]”](#) for more information.
 - i) Added default installation folder and program group information.
Refer to [“13. Software Installation and Upgrade”](#) for more information.
 - j) CG Tools Reference (H059W004) now referenced instead of featuring hardware configuration information in this manual. This will improve the ability to maintain configuration information in future to coincide with CG Tools software releases.
Refer to [“15. Hardware Configuration \[CLARITY\]”](#) for more information.
 - k) Added system monitoring information specific to Clarity 5000.
Refer to [“19. System Monitoring and Configuration \[CLARITY\]”](#) for more information.
 - l) Added information relating to Clarity 5000 related PCB’s (H100 Standard Definition/High Definition (SD/HD) Framestore CPU and Input/Output + Audio, H101 Disk Interface, H102 Video Backplane, H104 Standard Definition/High Definition (SD/HD) Rear Panel and H108 Power Distribution). Also added Clarity 5000 PCB, disk drive and power supply locations.
Refer to [“20.1.2 Possible PCB utilisation depending on model and channel derivative”](#) for more information.
Refer to [“20.3.8 Clarity 5000 STYLE A \(dual channel with clips/internal storage\)”](#) for more information.
Refer to [“20.23 H100 Standard Definition/High Definition \(SD/HD\) Framestore CPU and Input/Output + Audio”](#) for more information.
Refer to [“20.24 H101 Disk Interface”](#) for more information.
Refer to [“20.25 H102 Video Backplane”](#) for more information.
Refer to [“20.26 H104 Standard Definition/High Definition \(SD/HD\) Rear Panel”](#) for more information.
Refer to [“20.29 H108 Power Distribution”](#) for more information.
 - m) Added information regarding the connection of Clarity 5000 systems to an optional Chaparral 2RU SCSI external storage unit.
Refer to [“21.11.2 Installing an optional Chaparral 2RU SCSI external storage unit”](#) for more information
 - n) Updated support details to feature latest Pixel Power website links.
Refer to [“22. Support”](#) for more information.

2. H059W003_Rev01_E, Draft E, August 2005

- a) Removed "Drive Mapping", "Overview of Jobs and Job Copying", "Appendix A. Glossary of terms" and "Appendix B. Integration tools" sections which are now documented in CG Tools Reference (H059W004).
- b) Removed all references to Collette for Collage, revised Collette for Clarity references to Clarity PREP and used Clarity Plugin where relevant.
- c) Where topics are referenced in the CG Tools Reference (H059W004), there are now associated index search keywords present to help locate the correct information.
- d) Migrated "Detailed descriptions of product features and functionality" from "Product Overview and Features". Now documented in CG Tools Reference (H059W004).
- e) Migrated "FTP server configuration" from "Networking". Now documented in CG Tools Reference (H059W004).
- f) Migrated "Starting the CG Tools software", "Setting up a RapidAction keyboard" and "Exiting the software" from "Basics". Now documented in CG Tools Reference (H059W004).
- g) Migrated "Making use of .PPA/.PPV files and supporting conversion tools" from "Clarity Clip Storage and Management [CLARITY]". Now documented in CG Tools Reference (H059W004).
- h) Additional information now included to support Clarity 3U systems (Clarity 300 Style A rear panel). See topics below.
- i) Improved listing of further documentation resources to feature new online documentation shipped with the CG Tools software.
Refer to [“1.6 Further resources”](#) for more information.
- j) Added Clarity 300 Style A rear panel electrical ratings and product name plate location.
Refer to [“2. Regulatory Notices, Ratings and Warnings \[CLARITY\]”](#) for more information.
- k) Added Clarity 300 Style A rear panel and core product hardware features. Highlighted legacy systems using the [LEGACY] identifier.
Refer to [“3.1 Product overview”](#) for more information.
Refer to [“3.3 Core product hardware features”](#) for more information.
- l) Added Clarity 300 Style A rear panel and specification. Also revised labelling of connector descriptions due to space restrictions in topic titles.
Refer to [“4.3 Clarity 300 STYLE A rear panel layout, specification and connectors”](#) for more information.
Refer to [“4.11 Clarity 500 STYLE C rear panel layout, specification and connectors”](#) for more information.
- m) Added information regarding Clarity 300 dual-redundant 460W PSU cage.
Refer to [“5. Clarity Power Supply Units \(PSU\) \[CLARITY\]”](#) for more information.
- n) Added information regarding Clarity 300 Microsoft Windows product key, serial number and dongle serial number location. Also added new rack mount and set up information. Added USB connection details on schematics for current systems. Highlighted legacy systems using the [LEGACY] identifier.
Refer to [“6.1.2 Recording important information”](#) for more information.
Refer to [“6.1.3 Installing a system unit”](#) for more information.
Refer to [“6.1.4 Setting up a system unit”](#) for more information.
- o) Added new Clarity 300 connection schematic.
Refer to [“9. Clarity 300 STYLE A Connection Schematic \[CLARITY\]”](#) for more information.
- p) Updated CG tools licensing information to include information regarding new software licensing control and software support terms. Also revised installation architecture.
Refer to [“13. Software Installation and Upgrade”](#) for more information.
- q) Added information regarding 3U system power up and front panel description. Also revised 5U system front panel images with line drawings to improve visual clarity and flexibility.

- Refer to [“14.1 Switching a Clarity system unit on \[CLARITY\]”](#) for more information.
- Refer to [“14.3 Finding your way around a Clarity system unit \[CLARITY\]”](#) for more information.
- r) Added missing information for the Compensate group box on the Auxiliary A/B dialog tab of the SD Hardware Configuration dialog box. Refer to [“14.5 Auxiliary A/B dialog tab”](#) for more information.
 - s) Added information relating to the new Version 2 RapidAction keyboard and the existing standard keyboard shipped with Clarity 100 system units. Refer to [“17. Keyboard”](#) for more information.
 - t) Revised information regarding internal and external clip options for all systems (including audio only storage) to match current availability. Added information relating to Clarity 300 internal clip storage and 3U drive removal and replacement. Revised system front panel images with line drawings to improve visual clarity and flexibility. Added clip volume naming conventions and limited information regarding clip store emulation. Removed majority of software based procedural information regarding the testing of clip storage and replaced with succinct GUI descriptions linked to topics in the CG Tools Reference (H059W004). Refer to [“18.1 About optional disk storage for video/audio clip player”](#) for more information. Refer to [“18.2 About optional disk storage for audio clip player”](#) for more information. Refer to [“18.6 Clip drive locations within system unit derivatives”](#) for more information. Refer to [“18.9 Drive removal, replacement and re-fitment”](#) for more information. Refer to [“18.11.1.3 Internal storage volume naming conventions”](#) for more information. Refer to [“18.12 Clip store emulation”](#) for more information. Refer to [“18.13 Testing clip storage and learning more about using clips”](#) for more information.
 - u) Added information relating to Clarity 300 physical monitoring. Also updated information regarding rack monitoring and Serial/GPI monitoring to feature Clarity 300 system unit connections. Refer to [“19.2 3U Clarity system physical monitoring”](#) for more information. Refer to [“19.4 Rack monitoring and configuration via software”](#) for more information. Refer to [“19.6 Serial and GPI monitoring”](#) for more information.
 - v) Added information relating to Clarity 300 related PCB's (H105 Front Panel Display and H106 Internal Clip Storage SCSI/SATA/Power System Backplane). Also added Clarity 300 PCB, disk drive and power supply locations. Refer to [“18.81 Clarity 2 PCB utilisation depending on model and channel derivative”](#) for more information. Refer to [“20.3.3 Clarity 300 STYLE A \(with clips/internal storage\)”](#) for more information. Refer to [“20.25 H102 Video Backplane”](#) for more information. Refer to [“20.28 H106 SCSI/SATA/Power System Backplane”](#) for more information.
 - w) Revised air filter maintenance procedure to feature Clarity 3U systems. Refer to [“21.1 Air filter maintenance”](#) for more information.
 - x) Added new procedure regarding the removal and replacement of the USB dongle from Clarity 300 systems. Refer to [“21.6.1 Removing and re-fitting an internal USB dongle”](#) for more information.
 - y) Added new procedure regarding the installation an optional Chaparral 2RU SCSI external storage unit. Refer to [“21.11.2 Installing an optional Chaparral 2RU SCSI external storage unit”](#) for more information.
 - z) Migrated "Appendix C. Installing Clarity system unit PCI device drivers [CLARITY]" section to "Performing Maintenance and Upgrades [CLARITY]". Refer to [“21.11.1 Installing Clarity system unit PCI device drivers \[CLARITY\]”](#) for more information.
 - aa) Updated "Support" section with information about making comments using the CG Tools Reference (H059W004) in HTML Help format. Refer to [“22.4.1 Comments?”](#) for more information.

3. H059W003_Rev01_D, Draft D, December 2004

- a) Removed "Getting Started", "Software Configuration" and "Appendix B - Supported file formats" sections which are now documented in the CG Tools Reference (H059W004).
- b) Additional information now included to support Clarity 500 Style B rear panel. Refer to [“2. Regulatory Notices, Ratings and Warnings \[CLARITY\]”](#) for more information. Refer to [“3. Product Overview and Features”](#) for more information. Refer to [“4. Rear Panels, Specification, and Connectors \[CLARITY\]”](#) for more information. Refer to [“6. Clarity and Clarity PREP PC Installation”](#) for more information. Refer to [“10. Clarity 500 STYLE B Connection Schematic \[CLARITY\]”](#) for more information. Refer to [“18. Clarity Clip Storage and Management \[CLARITY\]”](#) for more information. Refer to [“19. System Monitoring and Configuration \[CLARITY\]”](#) for more information. Refer to [“20. Inside a System Unit \[CLARITY\]”](#) for more information. Refer to [“21. Performing Maintenance and Upgrades \[CLARITY\]”](#) for more information.
- c) New redundant power supply now featured on Clarity 500 Style B rear panel systems. Refer to [“2. Regulatory Notices, Ratings and Warnings \[CLARITY\]”](#) for more information. Refer to [“3. Product Overview and Features”](#) for more information. Refer to [“5.5 Clarity 500 STYLE B systems \[LEGACY\]”](#) for more information.
- d) Corrections to pinout numbering on all female D-type connectors. Refer to [“4. Rear Panels, Specification, and Connectors \[CLARITY\]”](#) for more information.
- e) Corrections to pinout mapping for Clarity 100 and 200 44-pin breakout communication cable data. Refer to [“6. Clarity and Clarity PREP PC Installation”](#) for more information.
- f) Addition of pinout mapping for Clarity 500 15-way breakout digital audio/LTC cable data. Refer to [“6. Clarity and Clarity PREP PC Installation”](#) for more information.
- g) Revised connection schematic for Clarity 500 STYLE B rear panel systems. Refer to [“10. Clarity 500 STYLE B Connection Schematic \[CLARITY\]”](#) for more information.
- h) Updated SD hardware configuration information to match version 6.4.0.0 of the CG Tools software. Now features new Blanking dialog tab and the removal of the Audio dialog tab. Audio software configuration is now available on the CHAN A/B I/O dialog subtab on the Audio Settings dialog tab on the User Preferences dialog box. Refer to [“14. SD Hardware Configuration \(V.7.0.0.0\) \[CLARITY\]\[SD\]”](#) for more information.

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- i) Added information relating to CG Tools software licensing and DK2 DESKey driver management.
Refer to [“13.3 CG Tools software licensing”](#) for more information.
Refer to [“13.5 Managing the DK2 DESKey software”](#) for more information.
 - j) Updated configuration of MS Services for UNIX networking to feature Microsoft Windows 2000/XP relevant client configuration instructions.
Refer to [“16.1 Microsoft® Windows® Services for UNIX networking”](#) for more information.
 - k) Updated FTP server configuration information to feature configuration of host Clarity FTP server port.
Refer to [“If you now select the drive letter that you mapped in the steps above whilst using Windows Explorer, the file listing of the mapped Collage main drive is shown.”](#) for more information.
 - l) Revised information regarding the back up and transfer of clips via the updated Clarity FTP server. Only supported by CG Tools software version 6.4.0.0 onwards. Also documented PPAudioConvert audio conversion tool.
Refer to [“18.14 Backing up and transferring clips”](#) for more information.
 - m) Corrections to the labelling of Clarity 100 and 200 front panel controls.
Refer to [“14. Basics”](#) for more information.
Refer to [“19. System Monitoring and Configuration \[CLARITY\]”](#) for more information.
 - n) Updated support details to feature latest Pixel Power website links.
Refer to [“22. Support”](#) for more information.

4. H059W003_Rev01_C, Draft C, June 2004

- a) General formatting changes including TOC and LOF text point size reduction and inclusion of new product images on the front cover.
- b) Global changes include the addition of information regarding the new Clarity products released at NAB 2004. These include the new Clarity 100 character generator offering a rich feature set and cost effective performance in a compact 1RU chassis; Clarity 200 character generator delivering a rich feature set including video clip capability in a compact 2RU chassis and Clarity 500 providing two fully independent channels with dual preview outputs. Clarity PREP and Clarity Plugin are now referenced instead of Collette for Clarity and Collette for Avid plugin.
- c) Added new ratings, warning information and product name plate location for new product iterations.
Refer to [“2. Regulatory Notices, Ratings and Warnings \[CLARITY\]”](#) for more information.
- d) Added details of new hardware and software for new product iterations including rear panels. Also updated software features matrix.
Refer to [“3. Product Overview and Features”](#) for more information.
- e) Added specifications of new hardware product iterations including rear panels and featured new rear panel connectors.
Refer to [“4. Rear Panels, Specification, and Connectors \[CLARITY\]”](#) for more information.
- f) Added details of power supplies featured on new product iterations.
Refer to [“5. Clarity Power Supply Units \(PSU\) \[CLARITY\]”](#) for more information.
- g) Added information and diagrams documenting the installation of new hardware product iterations including rear panels and new cabling types used.
Refer to [“6. Clarity and Clarity PREP PC Installation”](#) for more information.
- h) Updated software installation to mention new offline preparation software names. Added new information on how to upgrade existing software installations using patches.
Refer to [“13. Software Installation and Upgrade”](#) for more information.
- i) Updated basic operating information to include new hardware product iterations.
Refer to [“14. Basics”](#) for more information.
- j) Added Clarity 200 clip storage information.
Refer to [“18. Clarity Clip Storage and Management \[CLARITY\]”](#) for more information.
- k) Added details of front panels, displays and system monitoring applicable to new product iterations.
Refer to [“19. System Monitoring and Configuration \[CLARITY\]”](#) for more information.
- l) Added details of system internals and new PCB's applicable to new product iterations.
Refer to [“20. Inside a System Unit \[CLARITY\]”](#) for more information.
- m) Added new physical maintenance procedures relevant to new product iterations.
Refer to [“21. Performing Maintenance and Upgrades \[CLARITY\]”](#) for more information.
- n) Added new appendix detailing available integration software.
Refer to [“B. Integration tools”](#) for more information.
- o) Added new standalone "Warranty and Support Options" section detailing the original equipment warranty, post warranty service options and pricing, training programmes and pricing and important information about returning your product for service or repair.

5. H059W003_Rev01_B, Draft B, November 2003

- a) Second customer release for BBC.
- b) General changes include improvements to online navigation, cross references, list of table and figures, table of contents and index, documenting new Clarity 2 STYLE C chassis in various sections and referencing new PCB's available in the new Clarity 2 STYLE C chassis.
- c) Added installation flow chart for both Clarity and Collette.
Refer to [“Clarity, Clarity PREP and Clarity Plugin Installation Flow Chart”](#) for more information.
- d) Added information about core system and development.
Refer to [“4. 5U System Core Information \[CLARITY\]”](#) for more information.
- e) Added information about Clarity power supplies.
Refer to [“5. Clarity Power Supply Units \(PSU\) \[CLARITY\]”](#) for more information.
- f) Added video connection schematic for Clarity 2 STYLE B chassis.
Refer to [“6. Clarity 2 STYLE B Connection Schematic \[CLARITY\]”](#) for more information.

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- g) Completed SD hardware configuration information for version 6.n.n.n software.
Refer to “13. SD Hardware Configuration (V.6.n.n.n) [CLARITY][SD]” for more information.
 - h) Added information about internal and external clip storage.
Refer to “18. [Clarity Clip Storage and Management \[CLARITY\]](#)” for more information.
 - i) Added information system monitoring and configuration.
Refer to “19. [System Monitoring and Configuration \[CLARITY\]](#)” for more information.

6. H059W003_Rev01_A, Draft A, June 2003

- a) First customer release.

IMPORTANT: RETAIN PACKAGING

Please retain this packaging and store in a safe, dry place. Due to the value, nature and weight of this system, when transporting to another site location or back to Pixel Power premises, the original packing must be used otherwise your warranty will be invalidated.

If returning the system to Pixel Power premises for maintenance and additional packaging materials are required due to the original materials being lost or damaged, additional packaging materials are available from Pixel Power.

Inadequate packaging may result in shipments to Pixel Power premises being refused at goods in.

If assistance is required when packing this system, please contact Pixel Power technical support.

PIXEL POWER TECHNICAL SUPPORT

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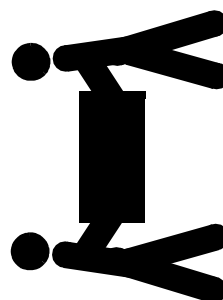


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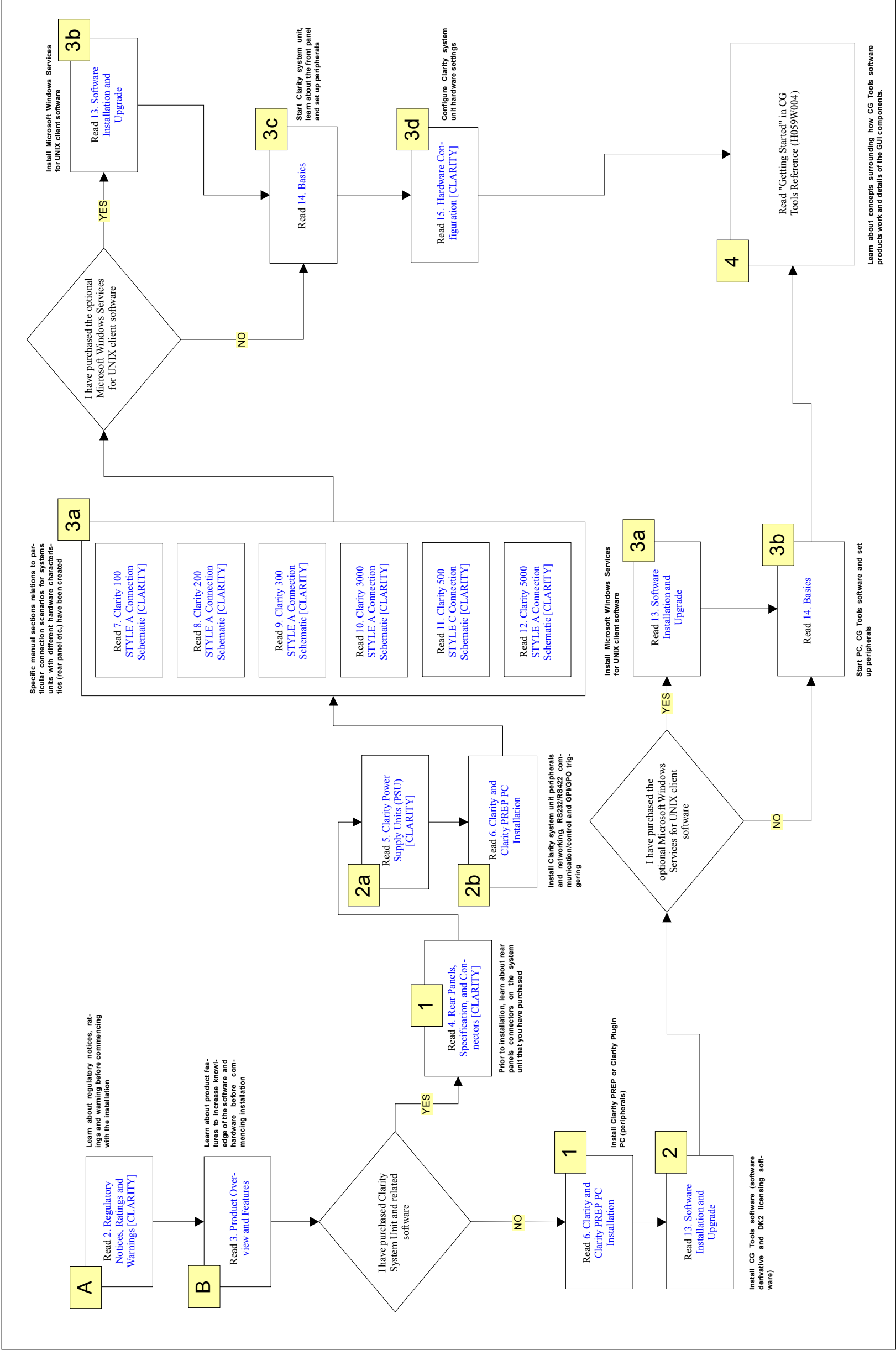
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Clarity, Clarity PREP and Clarity Plugin Installation Flow Chart



1. Introduction

1.1 About this manual

This manual will help you:

- learn about the Clarity product and its development history;
- learn about Clarity hardware and CG Tools software features;
- learn about Clarity systems and related peripheral specifications;
- install a Clarity system unit and/or prepare a PC for Clarity PREP software installation;
- install and upgrade Clarity and Clarity PREP software;
- configure Clarity hardware system options;
- learn about the internal make-up of Clarity system units;
- perform physical maintenance on Clarity system units;

1.2 Readership assumptions

This manual assumes that the reader is familiar with the basic computer engineering, architecture and connectivity.

It also makes the assumption that the reader has a reasonable amount of knowledge and/or experience in the field of on-air and post-production character and graphics generation and that they have a working knowledge of the Microsoft® Windows NT®, Windows 2000® or Windows XP® operating systems. Refer to the Microsoft website for more information on these operating systems.

<http://www.microsoft.com/windows>

1. Introduction



1.3 Manual conventions

This guide follows some simple conventions to improve its readability.

1.3.1 Typography

The following typographical conventions will be used from hereon:

T-1 Typography

| Example | Description |
|---|--|
| Bold, Style | User interface items and non-standard keys on the RapidAction keyboard. |
| Courier | File names, folder names, path names and text that you should enter. |
| CTRL + S | Press a key (or key combination) on the keyboard. |
|  | An alternative tool for a menu command or action; shown in the margin. |
|  | Index keyword to be used when searching the CG Tools Reference (H059W004) HTMLHelp file. |

1.3.2 Definitions

The following definitions will be referred to from hereon:



T-2 Definitions

| Term | Description |
|--|--|
| You | Person or persons using the product. |
| We | Pixel Power Ltd., Pixel Power Inc. |
| Clarity | The full editing and playout product as whole i.e. both hardware and software. |
| Clarity hardware/ Clarity system unit | The hardware part of the Clarity product. |
| Clarity PREP | The off-line editing software specifically for the production of material for use with a Clarity systems and the preparation and rendering of material for other non-linear edit systems e.g. Avid® and Discreet software. |
| Clarity Plugin | Version of the Clarity PREP software that runs as an AVX plugin within the Avid® Media Composer or Symphony editing environment. |

1.3.3 Symbols

The following symbols are used throughout this manual:

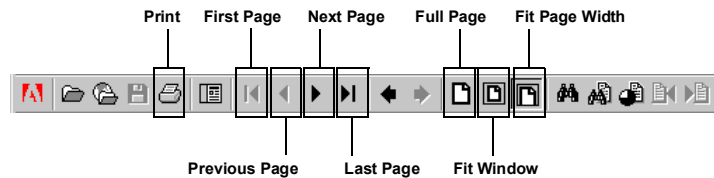
T-3 Symbols

| Example | Description |
|---|--|
|  | A warning indicates that the described activity or situation is very important to safeguard your safety and the prevent any damage to equipment. |
|  | Notes provide information that may be of special interest. |

1.3.4 Online navigation

This reference manual has also been made available to you in Adobe Acrobat .PDF form. To view the electronic version of this guide, you must have Adobe Acrobat Reader installed. Use the controls on the Adobe Acrobat Reader navigation bar in the following manner:

F-1 Adobe Acrobat Reader toolbar



For more information on using Adobe Acrobat Reader, refer to the documentation supplied with the product.

1.3.5 Highlighting features not available in TG and CG products

Refer to “[3.2 Software derivatives](#)” on page 3.23 for more information. Where features are not available for TG and CG products, [GX] is displayed at the right hand side of the section heading.

1.3.6 Highlighting specific product information and/or features

Where information or features are not available/applicable for either Clarity PREP or Clarity Plugin software products, [CLARITY] is displayed at the right hand side of the section heading.

Where information and features apply only to the Clarity PREP software product, [PREP] is displayed at the right hand side of the section heading.

Where information and features apply only to the Clarity Plugin software product, [PLUGIN] is displayed at the right hand side of the section heading.

1.3.7 Highlighting specific video definition derivative information or features

Where information or features are specifically available/applicable to only SD Clarity products, [SD] is displayed at the right hand side of the section heading. Where information or features are specifically available/applicable to HD Clarity products, [HD] is displayed at the right hand side of the section heading.

1.3.8 Highlighting CG Tools software version specific information or features

Where information or features are specifically available/applicable to a specific CG Tools software version onwards, [N.N.N.N] is displayed at the right hand side of the section heading.

1.3.9 Highlighting legacy products

Where products or systems are shown that are no longer supported or available for purchase, [LEGACY] is displayed at the right hand side of the section heading.

1. Introduction

1.4 Registration, training and upgrades

Enclosed with the product is a Product Registration Form. We suggest that you fill in the form and fax it back to us as soon as possible. Registration will entitle you to free upgrades for a year and enable us to inform you of new releases and training courses as they become available.

Pixel Power offers comprehensive training courses on all aspects of Clarity, Clarity PREP and Clarity Plugin installation, operation and maintenance either at the factory in Cambridge or on-site world-wide. Personal training programmes can also be structured to suit an individual organisation's requirements. Regular scheduled courses are also run at the BBC's residential training centre, the CBST at Wood Norton, near Evesham.

1.5 Product warranty and support options

In the "Warranty and Support Options" section the back of this manual, you can find out more about the original equipment warranty, post warranty service options and pricing, training programmes and pricing and important information about returning your product for service or repair. Alternatively, contact your dealer for more information.

1.6 Further resources

See the "Using this documentation and other support resources" section in the CG Tools Online Help/Reference Manual (H059W004) for detailed information regarding:

- CG Tools online help;
- accessing HTMLHelp whilst using the CG Tools software;
- how to use the online HTMLHelp;
- the availability of Pixel Power Technical Support;
- available CG Tools and Clarity documentation;
- Pixel Power's internet presence and how it can help you.

1.6.1 Manuals and guides

The following are currently available to support the CG Tools range of products and are featured on the Documentation CD-ROM:

T-4 Available manuals and guides

| Part Number | Title | Description | Format |
|-------------|--|---|-------------------------------|
| H059W002 | Clarity and Clarity PREP Quick Start Guide | Quick guide to the installation of all Clarity 100, 200, 300, 3000, 500 and 5000 systems and the CG Tools software. | Adobe Acrobat PDF |
| H059W003 | Clarity Installation, Operational Testing and Maintenance Manual | This manual. | Adobe Acrobat PDF |
| H059W004 | CG Tools Online Help/Reference Manual | Provides both an in-depth guide to the features and functionality of the CG Tools software and also a day-to-day reference to the software's user interface including menus and dialog boxes. | HTMLHelp or Adobe Acrobat PDF |

The above manuals are also installed as part of the CG Tools installation in the following default locations:

T-5 Default installation location of online documentation resources

| Part Number | Format | Default install location |
|-------------|-------------------|--|
| H059W002 | Adobe Acrobat PDF | C:\Program Files\Pixel Power Ltd\CG Tools 7.1\Documents\H059W002.pdf |
| H059W003 | Adobe Acrobat PDF | C:\Program Files\Pixel Power Ltd\CG Tools 7.1\Documents\H059W003.pdf |
| H059W004 | HTMLHelp | C:\Program Files\Pixel Power Ltd\CG Tools 7.1\Documents\H059W004.chm |
| | Adobe Acrobat PDF | C:\Program Files\Pixel Power Ltd\CG Tools 7.1\Documents\H059W004.pdf |

1.6.2 Software release information

Separate software release notes in Adobe Acrobat format previously accompanied every periodic CG Tools software release. Release information now forms part of the CG Tools Online Help/Reference Manual (H059W004) reference and is updated for every periodic CG Tools release. Release notes can be found in the "Release notes" section.

Release note information features the following topics:

- known problems;
- new features;
- bug fixes;
- updates to documentation not linked to current or previous releases.

Before downloading and/or installing a new version of the CG Tools software, we **STRONGLY** recommend that you contact Pixel Power Technical Support to check any outstanding issues that may affect your installation.

1. Introduction

2. Regulatory Notices, Ratings and Warnings [CLARITY]

2.1 Notices and Ratings for 1U and 2U systems

2.1.1 Clarity 100 and 200

2.1.1.1 Equipment rating

The ratings for Clarity 100 and 200 systems with STYLE A rear panels are shown below. Current systems are shaded dark grey. Refer to “3.1.2 Rear panel styles” on page 3.10 for more information.

T-6 Equipment ratings for Clarity 100 and Clarity 200

| Chassis | Clarity 100 | Clarity 200 |
|------------|--------------------------|--------------------------|
| Rear Panel | STYLE A rear panel | STYLE A rear panel |
| PSU Type | Single | Dual redundant PSU cage |
| Voltage | 100-127V/200-240V | 100-127V/200-240V |
| Frequency | 60/50Hz | 60/50Hz |
| Current | 4.96/2.48A | 5.2/2.6A |
| Fuse | N/A Non-User replaceable | N/A Non-User replaceable |

2.1.1.2 Further information

Please refer to the following Intel® Corporation documentation for further information on compliance notices and equipment ratings.



F-2 Intel® documentation relevant to Clarity 100 and 200

| Product | Intel Server Chassis | Product Guide | Technical Product Specification |
|-------------|----------------------|---|---|
| Clarity 100 | SRF1300 | ftp://download.intel.com/support/motherboards/server/chassis/sr1300/sr1300_pg.pdf | ftp://download.intel.com/support/motherboards/server/chassis/sr1300/sr1300_tps.pdf |
| Clarity 200 | SRF2300 | ftp://download.intel.com/support/motherboards/server/chassis/sr2300/sr2300_pg.pdf | ftp://download.intel.com/support/motherboards/server/chassis/sr2300/tps.pdf |
| | SRF2400 | ftp://download.intel.com/support/motherboards/server/chassis/sr2400/sb/c51501002_sr2400_ug.pdf | ftp://download.intel.com/support/motherboards/server/chassis/sr2400/sb/sr2400tpsv101.pdf |

2. Regulatory Notices, Ratings and Warnings [CLARITY]

2.2 Notices and Ratings for 3U systems

2.2.1 Clarity 300 and Clarity 3000

2.2.1.1 CE Notice (E.C. Only)



Marking by the CE indicates compliance of this system to the EMC (Electromagnetic Compatibility) directive of the European Community. Such marking is indicative that this system meets or exceeds the following technical standards.

EN 55103-1:1997 - “Emissions: Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use.”

EN 55103-2:1996 - “Immunity: Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use.”

CAUTION this is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

EN 60950:1992+Amd. 1:1993+Amd.2:1993 - “Safety of information technology equipment including electrical business equipment.”

2.2.1.2 FCC Notices (U.S. Only)

Class A

Note: This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. This equipment has been tested and found to comply with the limits for a class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

2.2.1.3 Equipment ratings for Clarity 300

The ratings for Clarity 300 systems are shown below. Current systems are shaded dark grey. Refer to “[3.1.2 Rear panel styles](#)” on page 3.10 for more information. The ratings are also clearly listed on the rear panel label for each system.

T-7 Equipment ratings for Clarity 300

| | |
|-------------------|--------------------------|
| Chassis | Clarity 300 |
| Rear Panel | STYLE A rear panel |
| PSU Type | Dual redundant PSU cage |
| Voltage | 100-240V |
| Frequency | 47-63Hz |
| Current | 8/4A |
| Fuse | N/A Non-User replaceable |

2.2.1.4 Equipment ratings for Clarity 3000

The ratings for Clarity 3000 systems are shown below. Current systems are shaded dark grey. Refer to “[3.1.2 Rear panel styles](#)” on page 3.10 for more information. The ratings are also clearly listed on the rear panel label for each system.

2. Regulatory Notices, Ratings and Warnings [CLARITY]

T-8 Equipment ratings for Clarity 3000

| | |
|-------------------|--------------------------|
| Chassis | Clarity 3000 |
| Rear Panel | STYLE A rear panel |
| PSU Type | Dual redundant PSU cage |
| Voltage | 100-240V |
| Frequency | 47-63Hz |
| Current | 8/4A |
| Fuse | N/A Non-User replaceable |

2. Regulatory Notices, Ratings and Warnings [CLARITY]

2.3 Notices and Ratings for 5U systems

2.3.1 Clarity, Clarity 2, Clarity 500 and Clarity 5000

2.3.1.1 CE Notice (E.C. Only)



Marking by the CE indicates compliance of this system to the EMC (Electromagnetic Compatibility) directive of the European Community. Such marking is indicative that this system meets or exceeds the following technical standards.

EN 55103-1:1997 - “Emissions: Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use.”

EN 55103-2:1996 - “Immunity: Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use.”

CAUTION this is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

EN 60950:1992+Amd. 1:1993+Amd.2:1993 - “Safety of information technology equipment including electrical business equipment.”

2.3.1.2 FCC Notices (U.S. Only)

Class A

Note: This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. This equipment has been tested and found to comply with the limits for a class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

2.3.1.3 Equipment ratings for Clarity, Clarity 2 and Clarity 500

The ratings for Clarity, Clarity 2 and Clarity 500 systems are shown below. Current systems are shaded dark grey. Refer to “[3.1.2 Rear panel styles](#)” on page 3.10 for more information. The ratings are also clearly listed on the rear panel label for each system.

T-9 Equipment ratings for Clarity, Clarity 2 and Clarity 500

| Chassis | Clarity | Clarity 2 | | | | Clarity 500 | | | | |
|------------|-----------------|-----------|----------|----------------|----------|-------------|----------------|----------|----------------|-------------------------|
| Rear Panel | STYLE A | STYLE B | STYLE C | | STYLE D | STYLE A | | STYLE B | | STYLE C |
| PSU Type | Single | Single | Single | Dual Redundant | Single | Single | Dual Redundant | Single | Dual Redundant | Dual redundant PSU cage |
| Model No | H050/51 CLARITY | | | | | | | | | |
| Voltage | 100-240V | 100-240V | 115-230V | 100-240V | 100-240V | 115-230V | 100-240V | 115-230V | 100-240V | 115-230V |
| Frequency | 60/50Hz | | | | | | | | | |
| Current | 4/2A | 4/2A | 10/5A | 10/6A | 10/5A | 10/5A | 10/6A | 10/5A | 9/4.5A | 10/5A |

2. Regulatory Notices, Ratings and Warnings [CLARITY]

| Chassis | Clarity | Clarity 2 | | | | Clarity 500 | | | | |
|------------|-----------------------------------|-----------------------------------|--------------------------|----------------|---------|-------------|----------------|---------|----------------|-------------------------|
| Rear Panel | STYLE A | STYLE B | STYLE C | | STYLE D | STYLE A | | STYLE B | | STYLE C |
| PSU Type | Single | Single | Single | Dual Redundant | Single | Single | Dual Redundant | Single | Dual Redundant | Dual redundant PSU cage |
| Fuse | T3 .15A 240V T6 .3A 110V | T3 .15A 240V T6 .3A 110V | N/A Non-User replaceable | | | | | | | |

2.3.1.4 Equipment ratings for Clarity 5000

The ratings for Clarity 5000 systems are shown below. Current systems are shaded dark grey. Refer to “3.1.2 Rear panel styles” on page 3.10 for more information. The ratings are also clearly listed on the rear panel label for each system.

T-10 Equipment ratings for Clarity 5000

| Chassis | Clarity 5000 |
|------------|--------------------------|
| Rear Panel | STYLE A |
| PSU Type | Dual-redundant PSU cage |
| Model No | H050/51 CLARITY |
| Voltage | 115-230V |
| Frequency | 60/50Hz |
| Current | 10/5A |
| Fuse | N/A Non-User replaceable |

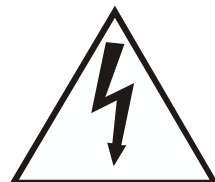
2. Regulatory Notices, Ratings and Warnings [CLARITY]

2.4 Product safety markings

Hardware products may have either labels similar to the graphics shown below or moulded/stamped facsimiles of these graphics on the chassis or on parts contained with the chassis. The explanation of these graphics appears on this page.

Please observe all cautions indicated on this page and those indicated in the safety instruction section.

F-3 Electrical safety label



The lightning flash with arrowhead symbol, within the equilateral triangle (either red or yellow), is intended to alert the user to the presence of un-insulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electrical shock.

2.5 Important

All Pixel Power Ltd. hardware products are tested in order that you may be sure that when it is properly installed and used in its normal and customary manner, all foreseeable risks have been eliminated. DO NOT modify this unit or commission others to do so unless specifically authorized by Pixel Power Ltd. and/or their authorised agents. Product performance and/or safety standards may be diminished. Claims filed under the expressed warranty may be denied if the product is/ has been modified. Implied warranties may also be affected.

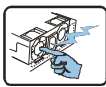
Please study this manual carefully and consult your dealer before requesting service.

Service charges incurred due to lack of knowledge relating to how a function or effect works (when the unit is operating as designed) are not covered by the manufacturer’s warranty, and are therefore the owners responsibility.

Should this product become damaged beyond repair, or for some reason its useful life is considered to be at an end, please observe all local, state, and federal regulations that relate to the disposal of products that contain lead, batteries, plastics, etc.

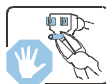
2.6 Warnings

2.6.1 Power



The power supply in this product contains no user-serviceable parts. There may be more than one supply in this product.

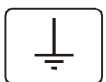
Refer servicing only to qualified personnel.



Do not attempt to modify or use the supplied AC power cord if it is not the exact type required. A product with more than one power supply will have a separate AC power cord for each supply.

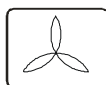


The power button on the system does not turn off system AC power. To remove AC power from the system, you must unplug each AC power cord from the wall outlet or power supply. The power cord(s) is considered the disconnect device to the mains (AC) power. The socket outlet that the system units plugs into should be installed near the equipment and should be easily accessible.



This equipment must be suitably earthed. This equipment contains no user serviceable parts inside. Replace fuse only with same type and rating. Your warranty may be invalidated if fuses of an incorrect rating are used. Refer to “[21.3 Replacement of PSU fuse](#)” on page 21.3 for more information.

2.6.2 Airflow



For proper cooling and airflow, always reinstall the chassis cover before turning on the system unit.

Operating a system unit without the cover in place can damage system parts.

2.6.3 Parts and sub-assemblies may become hot



The microprocessor(s) and heat sink(s) may be hot if the system unit has been running. Also, there may be sharp pins and edges on some PCB and chassis parts. Contact should be made with care. Consider wearing protective gloves.

2.6.4 Battery



This product MAY contain a small non-rechargeable battery (if applicable). The average life span of this type of battery is approximately five years. Do not attempt to recharge, disassemble, or incinerate this type of battery. Keep all batteries away from children.



Dispose of used batteries promptly and as regulated by applicable laws. Danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer.

2.7 Recommended operating environment

Clarity system units are designed to operate in a typical office environment. Choose a site that is:

- Clean and free of airborne particles (other than normal room dust).
- Well-ventilated and away from sources of heat including direct sunlight.
- Away from sources of vibration or physical shock.
- Isolated from strong electromagnetic fields produced by electrical devices.
- In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppresser and disconnect telecommunication lines to your modem during an electrical storm.
- Provided with a properly grounded wall outlet.
- Provided with sufficient space to access the power supply cord(s), because they serve as the product's main power disconnect.

2.8 Product and FCC label locations for 1U and 2U systems

2.8.1 Clarity 100 STYLE A

The picture below indicates the location of the product label. The label is located on the flat panel, inside the PSU enclosure recess on the right-hand side of the rear panel. The model number and serial number are located on this label. You should record the model number and serial number in the spaces provided below and retain this manual as a permanent record of your purchase.

F-4 Product label for Clarity 100 STYLE A



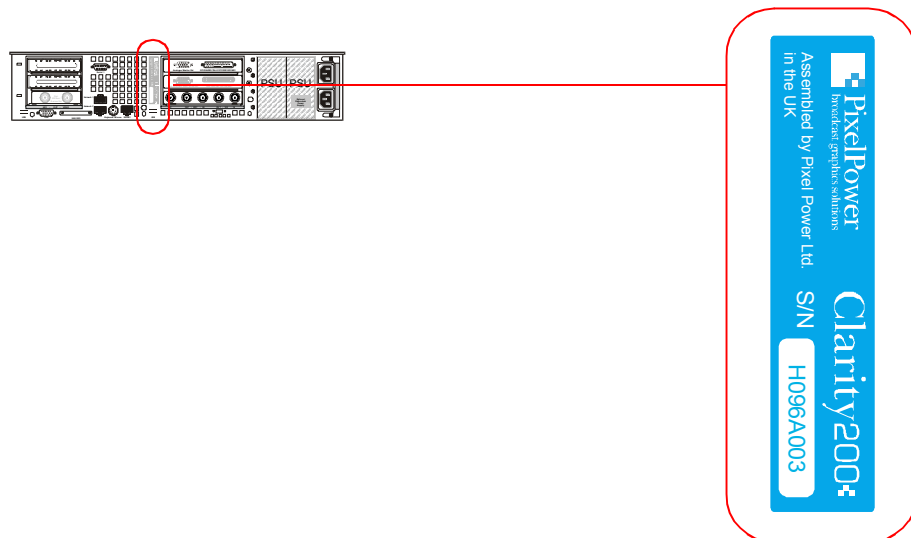
T-11 Clarity 100 STYLE A product details

| | Enter here |
|------------------------------------|------------|
| Model Number e.g. H096 Clarity 100 | |
| Serial Number e.g. H096A001 | |

2.8.2 Clarity 200 STYLE A

The picture below indicates the location of the product label. The model number and serial number are located on this label. You should record the model number and serial number in the spaces provided below and retain this manual as a permanent record of your purchase.

F-5 Product label for Clarity 200 STYLE A



T-12 Clarity 200 STYLE A product details

| | Enter here |
|------------------------------------|------------|
| Model Number e.g. H096 Clarity 200 | |
| Serial Number e.g. H096A001 | |

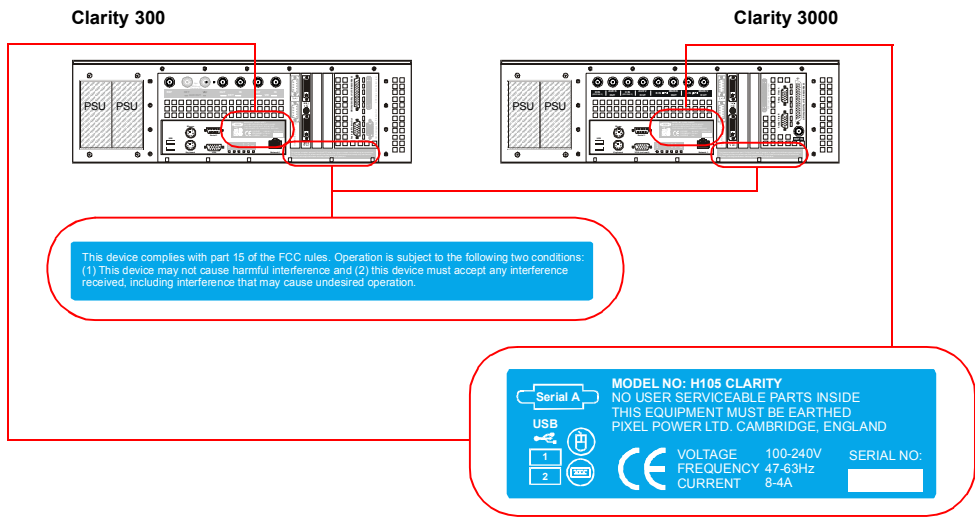
2. Regulatory Notices, Ratings and Warnings [CLARITY]

2.9 Product and FCC label locations for 3U systems

2.9.1 Clarity 300 STYLE A and Clarity 3000 STYLE A

The picture below indicates the location of the product label and separate FCC statement label. The model number, serial number, power requirements, etc., are located on the product label. You should record the model number and serial number in the spaces provided below and retain this manual as a permanent record of your purchase.

F-6 Product label/FCC statement label for Clarity 300 STYLE A and Clarity 3000 STYLE A



T-13 Clarity 300 STYLE A and Clarity 3000 STYLE A product details

| | Enter here |
|---|------------|
| Model Number e.g. H105 Clarity 300/3000 | |
| Serial Number e.g. H105A001 | |

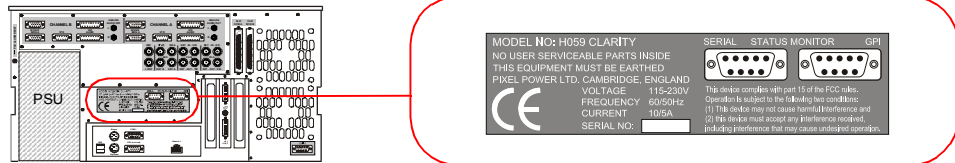
2. Regulatory Notices, Ratings and Warnings [CLARITY]

2.10 Product and FCC label locations for 5U systems

2.10.1 Clarity 500 STYLE C and Clarity 5000 STYLE A

The picture below indicates the location of the product/FCC statement label. The model number, serial number, power requirements, etc., are located on this label. You should record the model number and serial number in the spaces provided below and retain this manual as a permanent record of your purchase.

F-7 Product/FCC statement label for Clarity 500 STYLE C



F-8 Product/FCC statement label for Clarity 5000 STYLE A



T-14 Clarity 500 STYLE C and Clarity 5000 STYLE A product details

| | Enter here |
|---|------------|
| Model Number e.g. H059 Clarity 500/5000 | |
| Serial Number e.g. H059A001 | |

2. Regulatory Notices, Ratings and Warnings [CLARITY]

3. Product Overview and Features

3.1 Product overview

Clarity is a family of powerful, multi-format, single and multi-channel graphics systems addressing the character generation, still/clip store and animated graphics requirements of television broadcasters and post production. Offered in combinations of standard and high definition formats, there are even Clarity models that can simulcast both standard and high definition from a single system.

Built upon the very latest computer technology, every Clarity offers exceptional performance, based on the experience gained from over 2000 Pixel Power broadcast graphics systems in operation. Unlike the PC broadcast solutions of the past Pixel Power Clarity has been designed as a turnkey broadcast solution from a single manufacturer who is fully committed to its support.

Clarity offers the comfort and familiarity of the Windows user interface using a hybrid of dedicated graphics hardware and open platform PC technology. This assures compatibility with computer industry standards while our dedicated graphics hardware provides reliable, real-time performance. The Clarity graphics system incorporates innovative computer technology using multiple programmable pixel processors operating in parallel on each framestore card.



3. Product Overview and Features

3.1.1 Clarity past and current hardware production iterations

3.1.1.1 1U and 2U Clarity systems

The single 1U and 2U rack-mounted units offer complete turnkey systems with all necessary software installed. Based around standard Intel server platforms utilising single or dual processors, they offer cost effective performance in a compact form factor. The award winning CG Tools software runs on the Microsoft® Windows XP® Professional operating system, offering great reliability and performance together with the ability to integrate easily with existing equipment in your current solution.

T-15 Clarity 1U and 2U hardware production iterations

| Designation | Clarity 100 | Clarity 200 | | | |
|-------------|--|--|----------------|---|----------------|
| Chassis | Standard 19" 1U | Standard 19" 2U | | | |
| Rear Panel | STYLE A | STYLE A | | STYLE B | |
| PSU Type | Single | Single | Dual-redundant | Single | Dual-redundant |
| Description | Introduced in spring 2004. Based around the Intel® 2U SRF1300 server chassis and applicable server board at time of purchase. | Introduced in spring 2004. Based around the Intel® 2U SRF2300 server chassis and applicable server board at time of purchase. | | Introduced in autumn 2005. Based around the Intel® 2U SRF2400 server chassis and applicable server board at time of purchase. | |
| Features | <p>CG functionality is provided via dedicated Pixel Power graphics hardware in the form of a full length PCI form factor PCB (the H096 combined single channel framestore and I/O). Refer to “20.20 H096 Standard Definition (SD) Framestore CPU and Input/Output (I/O) + Audio” on page 20.34 for more information.</p> <p>Rear panel connectivity over and above that offered by the standard SRF1300 rack is in the form of a dedicated video and key I/O rear panel enclosure utilising standard BNC connectors and a dedicated analogue monitoring and multipurpose I/O (GPIO/AUDIO/TALLY/LTC/RS232/RS422) rear panel enclosure utilising standard D-type connectors.</p> | <p>CG functionality is provided via dedicated Pixel Power graphics hardware in the form of a full length PCI form factor PCB (the H096 combined single channel framestore and I/O). Refer to “20.20 H096 Standard Definition (SD) Framestore CPU and Input/Output (I/O) + Audio” on page 20.34 for more information.</p> <p>Optional clip processing functionality and dedicated preview output provided via the H098 clip processing and I/O PCB. Refer to “20.22 H098 Standard Definition (SD) Clip Processing and Input/Output (I/O)” on page 20.36 for more information.</p> <p>Standard rear panel connectivity over and above that offered by the standard SRF2300/SRF2400 rack is in the form of a dedicated video and key I/O rear panel enclosure utilising standard BNC connectors and dedicated analogue monitoring and a multi-purpose I/O (GPIO/AUDIO/TALLY/LTC/RS232/RS422) rear panel enclosure utilising standard D-type connectors.</p> <p>Also available is an optional dedicated preview output and external SCSI rear panel enclosure that accompanies the optional clip processing functionality. This utilises standard D-type and VHDCI SCSI connectors.</p> <p>This system also offers the availability of a dual-redundant power supply and internal clip storage as options.</p> | | | |

3.1.1.1.1 Clarity 100 STYLE A

[SD]

A turnkey system in a 1RU rack mount form factor, Clarity 100 is a single channel SD text generator with optional still store and 2D live video squeezeback capability.

Clarity 100 offers all the text handling power that you expect from a real broadcast character generator. The graphics properties palette allows you to instantly define font, size, edge, shadow, texture and transparency. Text styles may be saved as presets to ensure consistency and allow global style changes during revisions. Text fields allow the creation of templates making common pages such as lower third displays fast and easy to create with absolute consistency.

Like all Clarity systems, the SDI video input may be used as video + key or dual video inputs, allowing for dual live video squeezebacks. A built-in DSK allows Clarity 100 to be inserted directly into the program stream for master control graphics insertion. Automatic relay bypass ensures your program stream stays on-air in the event of power loss or system failure. A perfect fit into large broadcast systems, Clarity 100 is file compatible with the rest of the Clarity family. Content created in Clarity 500, Clarity 200 or Clarity PREP may be played to air on a comparably equipped Clarity 100.

3. Product Overview and Features

Clarity 100 provides a variety of flexible automation interfaces allowing easy integration with all common master control, branding and newsroom automation systems.

Refer to “[3.1.2.1.1 Clarity 100 STYLE A \[SD\]](#)” on page 3.10 for more information.

3.1.1.1.2 Clarity 200 STYLE A

[SD]

Housed in a compact 2RU chassis, Clarity 200 is a single channel graphics system configurable with a mix of character generation, still store, 2D DVE and painting tools along with optional uncompressed video clip and audio capability.

Like Clarity 100, Clarity 200 is available with TG, CG or GX level software. Refer to “[3.2 Software derivatives](#)” on page 3.23 for more information. Simple post production and automated live-to-air applications may specify the core CG capability of Clarity 200 TG. Live production benefits from the internal still store, text and cel animations with Clarity 200 CG. Both may be upgraded at any time to include the off-line pre-production tools available with GX.

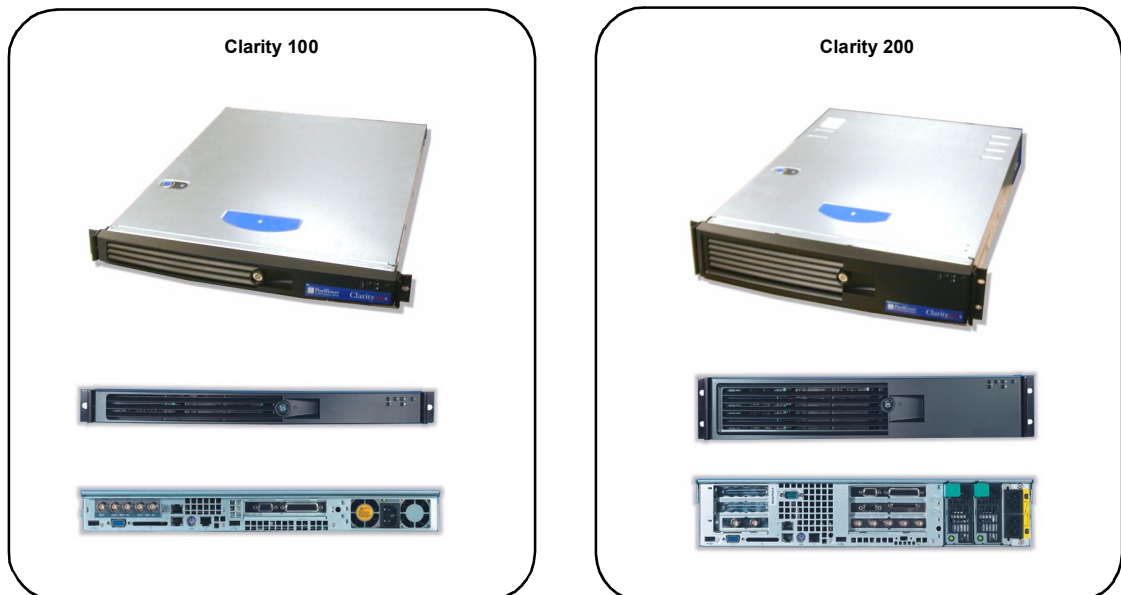
The optional video clip player for Clarity 200 provides uncompressed 4:2:2:4 video recording and playback from an internal disk array. Used as page backgrounds, clips can play forward or reverse, play-to-pause, loop or ping-pong. Precise control of clip playback is provided via a timeline display.

Clarity 200 provides one SDI output with key as well as one analog monitoring output. When fitted with the video clip option, it also provides a dedicated SDI preview output along with a corresponding analog monitoring output. As a further option, on a clips equipped system, the two SDI outputs may be configured as independent channels with preview on the users VGA display.

Clarity 200 may also be equipped with a powerful audio option. The audio option provides recording and playback of 4 channels from internal storage, as well as de-embed, mixing, ducking and re-embed. Combining operational speed with flexibility and expansion options, Clarity 200 is ideal for live broadcast environments, including control rooms, master control and remote production vehicles.

Refer to “[3.1.2.1.2 Clarity 200 STYLE A \[SD\]](#)” on page 3.10 for more information.

F-9 Clarity 100 STYLE A and Clarity 200 STYLE A system units



3. Product Overview and Features

3.1.1.2 3U Clarity systems

The single 3U rack-mounted units offer complete turnkey systems with all necessary software installed. Based around standard Intel server platforms utilising dual processors, they offer cost effective performance in a compact form factor. The award winning CG Tools software runs on the Microsoft® Windows XP® Professional operating system, offering great reliability and performance together with the ability to integrate easily with existing equipment in your current solution.

T-16 Clarity 3U hardware production iterations

| Designation | Clarity 300 | | Clarity 3000 |
|-------------|---|----------------|--|
| Chassis | Standard 19" 3U | | Standard 19" 3U |
| Rear Panel | STYLE A rear panel | | STYLE A rear panel |
| PSU Type | Single | Dual-redundant | Dual-redundant |
| Description | <p>Introduced in spring 2005. Based around a Pixel Power custom 3U chassis and applicable Intel® server board at time of purchase.</p> <p>CG functionality is provided via dedicated Pixel Power graphics hardware in the form of a full length PCI form factor PCB (the H096 combined single channel framestore and I/O). Refer to “20.20 H096 Standard Definition (SD) Framestore CPU and Input/Output (I/O) + Audio” on page 20.34 for more information.</p> <p>Optional clip processing functionality and dedicated preview output provided via the H098 clip processing and I/O PCB. Refer to “20.22 H098 Standard Definition (SD) Clip Processing and Input/Output (I/O)” on page 20.36 for more information.</p> <p>Standard rear panel connectivity is in the form of a dedicated video and key I/O rear panel enclosure utilising standard BNC connectors and dedicated analogue monitoring and a multi-purpose I/O (GPIO/AUDIO/TALLY/LTC/RS232/RS422) rear panel enclosure utilising standard D-type connectors. Also available is an optional dedicated preview output and external SCSI rear panel enclosure that accompanies the optional clip processing functionality. This utilises standard D-type and VHDCI SCSI connectors.</p> <p>This system also offers the availability of a dual-redundant power supply and internal clip storage as options.</p> | | <p>Introduced in spring 2006. Based around a Pixel Power custom 3U chassis and applicable Intel® server board at time of purchase.</p> <p>CG functionality is provided via dedicated Pixel Power graphics hardware in the form of two full length PCI form factor PCB's.</p> <p>The first is the H112 single channel SD/HD framestore CPU PCB. Refer to “20.31 H112 Standard Definition (SD) and High Definition (HD) Framestore CPU” on page 20.45 for more information.</p> <p>The second is the H111 SD/HD I/O PCB. Refer to “20.30 H111 Standard Definition (SD) and High Definition (HD) Input/Output (I/O) + Audio” on page 20.44 for more information. The H111 SD/HD I/O PCB also features enhanced I/O connectivity as standard in the form of the Interface Mezzanine PCB. Refer to “20.33 H114 Interface Mezzanine” on page 20.47 for more information.</p> <p>Optional clip functionality is provided via the H113 Disk Interface PCB. Refer to “20.32 H113 Disk Interface” on page 20.46 for more information.</p> <p>Standard rear panel connectivity is in the form of a dedicated video and key I/O rear panel enclosure utilising standard BNC connectors and a dedicated analogue monitoring, reference and multi-purpose I/O (GPIO/AUDIO/TALLY/LTC/RS232/RS422) rear panel enclosure utilising standard D-type connectors and a single BNC connector (REF). Also available is an optional SCSI rear panel enclosure that accompanies the optional clip functionality. This utilises a standard VHDCI SCSI connector.</p> <p>This system also offers the availability of a dual-redundant power supply and internal clip storage as options.</p> |

3.1.1.2.1 Clarity 300 STYLE A

[SD]

Clarity 300 is a high performance, single channel SD character generator and still store. While its core capabilities and available configurations are similar to Clarity 200, Clarity 300 is re-packaged in a 3RU form factor to provide greater performance and expandability.

The taller but shorter chassis features an enhanced cooling design resulting in reduced fan noise. This makes Clarity 300 the optimal choice of system for installation in editing suites, art departments, or wherever the chassis is near the operators location. In addition, the chassis depth of under 600mm enables Clarity 300 to fit easily into the shallow racks common in mobile production trucks. The larger chassis also accommodates a high performance VGA card with dual DVI type outputs. This improves the basic performance of the user interface display, especially useful in live production and online editing

environments where an operator is manually building and recalling pages.

The dual output capability of the VGA also provides increased space for the Windows desktop. This is ideal where Clarity is installed as a creation workstation in an offline graphics or design application. The workstation class host platform also provides two free PCI slots, allowing Clarity 300 to be enhanced through additional interface cards such as Firewire or future networking hardware. Clarity 300 is our top-of-the line single channel, standard definition graphics system, providing a powerful character generation, still and clip store toolset with expansion capability to meet your evolving production requirements.

Refer to “[3.1.2.2.1 Clarity 300 STYLE A \[SD\]](#)” on page 3.11 for more information.

3.1.1.2.2 Clarity 3000 STYLE A

[SD/HD]

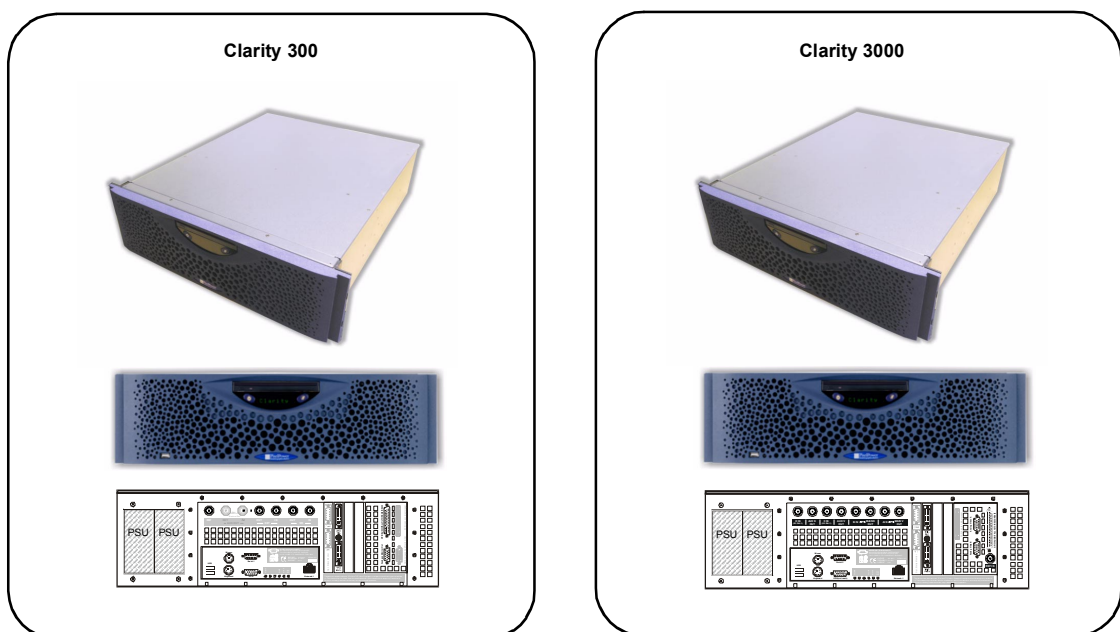
Housed in a compact 3RU chassis, Clarity 3000 is a single channel HD/SD switchable graphics system configurable with a mix of character generation, still store, DVE and painting tools along with optional video clip and audio capability. Clarity 3000 provides HD/SD SDI program and preview outputs with key. Supports standard definition video (SD) (525/625) in any aspect ratio, as well as any of the common high definition (HD) formats including 1080/60I, 1080/50I, 720/60P, 1080/24P and 1080/25P etc. Analog monitoring outputs are also provided. The preview output may optionally be configured as an independent channel. This configuration provides previews on the users dual head VGA display.

The system input is configurable as video + key or video 1 + video 2. Live squeezeback tools may be used to crop, resize, re-position and rotate the inputs in real-time. An additional pair of auxiliary inputs enable up to four squeezebacks in SD mode. This capability, combined with automatic fault sensing relay bypass, makes Clarity 3000 ideally suited to master control graphics insertion.

The optional video clip player for Clarity 3000 provides 4:2:2:4 video recording and playback from an internal disk array. Used as page backgrounds, clips can play forward or reverse, play-to-pause, loop or ping-pong. Precise control of clip playback is provided via a timeline display. Clarity 3000 may also be equipped with a powerful audio option. The audio option provides recording and playback of 4 channels from internal storage, as well as de-embed, mixing, ducking and re-embed. Combining operational speed with flexibility and expansion options, Clarity 3000 is the future-proof way to address HD and SD graphics demands with both ease and confidence.

Refer to “[3.1.2.2.2 Clarity 3000 STYLE A \[SD/HD\]](#)” on page 3.12 for more information.

F-10 Clarity 3000 STYLE A and Clarity 3000 STYLE A system units



3. Product Overview and Features

3.1.1.3 5U Clarity systems

The single 5U rack-mounted units offer complete turnkey systems with all necessary software installed. The award winning CG Tools software runs on the Microsoft® Windows 2000® or Windows XP® operating system, offering great reliability and performance together with the ability to integrate easily with existing equipment in your current solution. The system is flexible enough to allow for the introduction of increasingly sophisticated on-air graphics as well as changes in standards, networking and graphic technologies.

T-17 Clarity 5U hardware production iterations (current versions shown as dark shaded area)

| Model | Chassis | Rear Panel | Video | | PSU Type Availability | | Description |
|--------------|--------------------------------|------------|-------|-----|-----------------------|----------------|--|
| | | | SD | HD | Single | Dual Redundant | |
| Clarity | Standard 19" 5U | STYLE A | ◀ | ◀ | ◀ | N/A | The first iteration of the Clarity hardware platform was a direct descendant of the original Clarity prototype internals and chassis (Clarity, STYLE A). |
| | | | | | | | |
| Clarity 2 | Standard 19" 5U | STYLE B | ◀ | ◀ | ◀ | N/A | The chassis, internals and rear panel of Clarity were developed further into Clarity 2. The first version of the Clarity 2 hardware platform (Clarity 2, STYLE B) incorporated radical internal and rear panel changes over Clarity to provide for audio/video clip playback and rear panel connectivity. |
| | | | | | | | |
| | Longitudinally Extended 19" 5U | STYLE C | ◀ | N/A | ◀ | ◀ | Utilised a new longitudinally extended 5U chassis and improved rear panel connectivity. These changes enabled us to house a cleaner, simplified internal architecture that increases both space and improves performance and facilitates the inclusion of an optional internal video/audio disk storage solution. This hardware derivative also offered the availability of a dual-redundant power supply as an option for the first time. |
| | | | ◀ | ◀ | ◀ | N/A | |
| Clarity 500 | Longitudinally Extended 19" 5U | STYLE A | ◀ | N/A | ◀ | ◀ | SD capable only version of the Clarity hardware platform is identical in terms of chassis design and operational features to the Clarity 2 STYLE C iteration. The Clarity 500 designation was applied to match the new Clarity product line up introduced in spring 2004 i.e. 5 indicating 5U chassis size. |
| | | STYLE B | ◀ | N/A | ◀ | ◀ | Additional features of the STYLE B rear panel over STYLE A include the PSU ALARM RESET button on the left side of the rear panel and the modified positioning of the SERIAL and GPI STATUS MONITOR 9-pin female D-type connectors to enable the fitment of differing motherboard types. |
| | | STYLE C | ◀ | N/A | ◀ | ◀ | Additional features of the STYLE C rear panel over STYLE B include support for PCI-Express graphics cards (revised location on rear panel). Also, the 25-pin female D-type parallel port is no longer supported. |
| Clarity 5000 | Longitudinally Extended 19" 5U | STYLE A | ◀ | ◀ | ◀ | ◀ | Latest SD/HD capable version of the Clarity hardware platform. The Clarity 5000 designation was applied to match the new Clarity product line up introduced in spring 2004 i.e. 5 indicating 5U chassis size. Future HD enabled derivatives of Clarity systems will have the <i>nnnn</i> numerical identifier e.g. Clarity 3000. Utilises new graphics hardware/architecture enabling unrivalled performance. |

3.1.1.3.1 Clarity STYLE A

[LEGACY][SD][HD]

Based on the original prototype Clarity hardware/chassis design, but couples the original PCB architecture with an improved motherboard and revised rear backplane and STYLE A panel. Capable of outputting single and/or dual channels of Standard Definition (SD) and/or High Definition (HD) video depending on channel derivative. Refer to “[3.1.2.3.1 Clarity STYLE A \[SD/HD\]](#)” on page 3.13 for more information.

There are numerous versions of the Clarity hardware platform and they were differentiated by the number of High Definition (HD) or Standard Definition (SD) channels available.

NOTE: In some SD only configurations, the H059 Framestore CPU PCB were substituted by the new H088 Advanced CPU PCB used in the Clarity 2 systems.

3.1.1.3.2 Clarity 2 STYLE B

[LEGACY][SD]

This version of the Clarity 2 hardware was a system based around the same Clarity motherboard, but was coupled with the new PCB architecture which worked in conjunction with a new rear backplane and STYLE B rear panel to offer additional audio/video clip connectivity.

Capable of outputting and/or recording single and/or dual channels of Standard Definition (SD) video depending on channel derivative. Refer to “[3.1.2.3.2 Clarity 2 STYLE B \[SD\]](#)” on page 3.13 for more information.

With this hardware platform, only Standard Definition (SD) channels were available.

3.1.1.3.3 Clarity 2 STYLE C

[LEGACY][SD]

The longitudinally extended 5U chassis housed a cleaner, simplified internal architecture that will improve maintenance accessibility. The chassis was extended to house an optional internal video/audio storage solution.

As with STYLE B, audio/video clip connectivity was fully featured on the rear panel as well as a facility for SNMP monitoring/diagnostics of system parameters. This hardware derivative also offered the availability of a dual-redundant power supply as an option.

Capable of outputting and/or recording single and/or dual channels of Standard Definition (SD) video depending on channel derivative. Refer to “[3.1.2.3.3 Clarity 2 STYLE C \[SD\]](#)” on page 3.14 for more information.

With this hardware platform, only Standard Definition (SD) channels were available.

3.1.1.3.4 Clarity 2 STYLE D

[LEGACY][SD/HD]

Identical to Clarity STYLE A in terms of operational features, but utilises the latest longitudinally extended 19" 5U chassis developed for Clarity 2 STYLE C.

Refer to “[3.1.2.3.4 Clarity 2 STYLE D \[SD/HD\]](#)” on page 3.15 for more information.

There are numerous versions of the Clarity hardware platform and they were differentiated by the number of High Definition (HD) or Standard Definition (SD) channels available.

NOTE: In some SD only configurations, the H059 Framestore CPU PCB were substituted by the new H088 Advanced CPU PCB used in the Clarity 2 STYLE C systems.

3. Product Overview and Features

3.1.1.3.5 Clarity 500 STYLE A, STYLE B and STYLE C

[SD]

Clarity 500 is the multi-channel solution to any SD graphics requirement. Able to combine text, stills, video clips, sound and live video in each channel, Clarity 500 offers unprecedented power and flexibility. Available with TG, CG or GX level software features, there is a Clarity 500 system that meets your specific needs.

Clarity 500 provides two fully independent SD channels. While preview and editing windows are presented on the Windows XGA monitor, the system also provides dual SDI preview outputs with key. The optional four channel configuration re-purposes the preview outputs as two additional full resolution channels capable of CG page and still recall.

Ideally suited to both news production and master control promotions, each Clarity 500 channel provides dual real-time live video squeezeback. In addition, the channels may be internally combined to present 4 live 2D DVEs over clip or graphic backgrounds.

Each channel provides a 10-bit DSK allowing Clarity to be inserted in-stream in transmission applications. Fault sensing bypass relays ensure that program video stays on-air in the event of power loss or system failure.

The optional video clip player option for Clarity 500 provides two channels of uncompressed video and key from an internal video disk array. Video clips may be used as backgrounds or resized and relocated using the systems internal squeezeback capability.

With two fully independent channels supporting multiple simultaneous data feeds, timing sources and automation interfaces, Clarity 500 has the power and flexibility to provide cutting edge graphics for sports and live remote production.

Additional features of the STYLE B rear panel over STYLE A include the **PSU ALARM RESET** button on the left side of the rear panel and the modified positioning of the **SERIAL** and **GPI STATUS MONITOR** 9-pin female D-type connectors to enable the fitment of differing motherboard types.

Additional features of the STYLE C rear panel over STYLE B include support for PCI-Express graphics cards (revised location on rear panel). Also, the 25-pin female D-type parallel port is no longer supported.

Refer to “[3.1.2.4 Current 5U Clarity systems](#)” on page 3.18 for more information.

F-11 Clarity 500 STYLE A, STYLE B and STYLE C system unit



3.1.1.3.6 Clarity 5000 STYLE A

[SD/HD]

Clarity 5000 is Pixel Power's entirely new hardware architecture to meet the next generation of graphics requirements encompassing standard and high definition formats. Clarity 5000 is available in single and dual channel configurations.

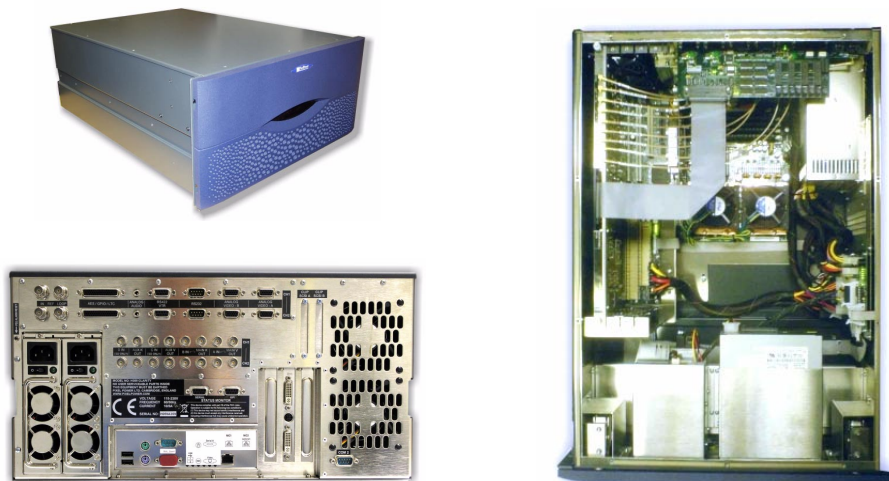
Each channel supports standard definition video (SD) (525/625) in any aspect ratio, as well as any of the common high definition (HD) formats including 1080/60I, 1080/50I, 720/60P, 1080/24P and 1080/25P etc. A single channel system is HD/SD switchable while dual channel systems may be dual channel HD, dual channel SD, or simultaneous HD and SD.

Each Clarity 5000 channel provides a dedicated preview output with key in addition to its program output. While normally used for preview, these auxiliary outputs may be optionally configured as additional program channels with basic text and stills capability.

Further enhancing its flexibility, each channel has user definable input configuration. In HD mode each channel has two inputs that may be used as video + key or video 1 + video 2. In SD mode each channel provides a total of four inputs, configurable as two video + key pairs or four discrete inputs. Each input features 2D DVE capability and automatic relay bypass, making Clarity 5000 especially suited to master control, channel branding and live-to-air promotions.

Clarity 5000 runs the latest CG Tools software, which includes clip capability, DVE, timeline animation and 3D options. Like its SD predecessors, Clarity 5000 provides a range of flexible interfaces to both new and legacy master control and newsroom automation systems.

F-12 Clarity 5000 STYLE A system unit



The optional video clip player for Clarity 5000 provides tight integration of clip content in both HD and SD modes of operation. Any page may use a clip background with user defined head, tail, loop, pause and timing settings. Clip storage is internal to the Clarity chassis or may be provided externally. All streams include video and key and can be fed through a 2D DVE before being layered on the output video.

In SD mode, four 2D DVEs are available per channel, and can be used to resize clip sources or live inputs. In HD mode, one 2D DVE is available per source (live input or clip). For example, in a dual channel system, four live inputs can be combined and squeezed onto a single HD output.

The audio option for Clarity 5000 provides comprehensive audio handling tools. Used in conjunction with the clips feature, the audio option enables Clarity to play opening animations, bumpers and rejoins, replacing VTRs with a playback under automation control. In addition, de-embed, mixing and re-embed capability makes Clarity 5000 an ideal tool for master control applications.

Refer to “[3.1.2.4.2 Clarity 5000 STYLE A \[SD/HD\]](#)” on page 3.20 for more information.

3. Product Overview and Features

3.1.2 Rear panel styles

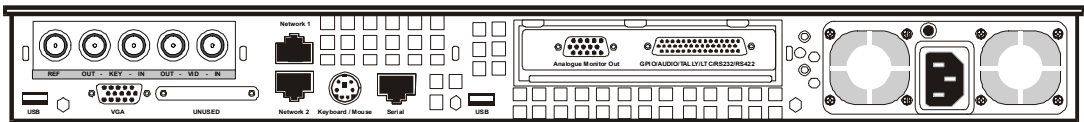
The sections below show the styles of rear panel available with the differing hardware platforms. To learn more about rear panel connectors, refer to “4. Rear Panels, Specification, and Connectors [CLARITY]” on page 4.1 for more information.

3.1.2.1 Current 1U and 2U Clarity systems

3.1.2.1.1 Clarity 100 STYLE A

[SD]

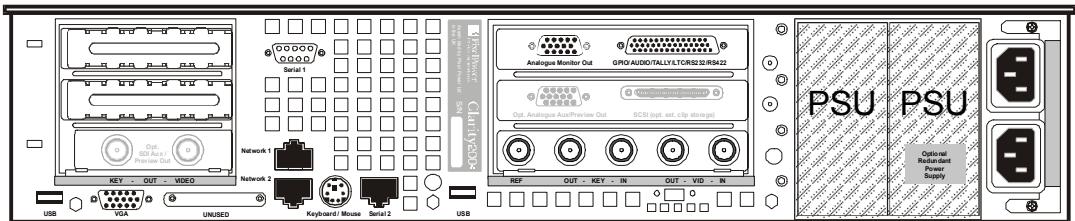
F-13 Clarity 100 STYLE A rear panel



3.1.2.1.2 Clarity 200 STYLE A

[SD]

F-14 Clarity 200 STYLE A rear panel

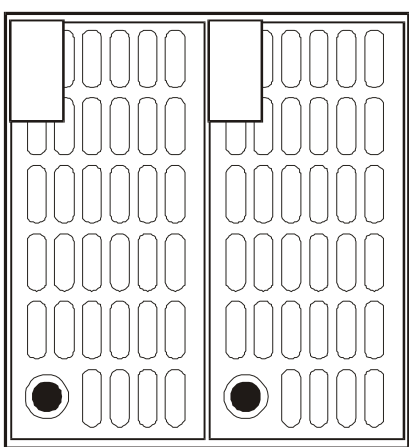
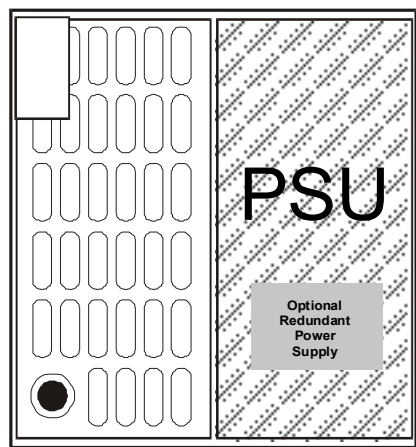


The Clarity 200 STYLE A chassis features a single, non-redundant (but redundant ready) PSU cage as standard. Also available is an optional second PSU module to enable dual redundancy.

F-15 Clarity 200 STYLE A PSU enclosures

Standard single non-redundant 500W PSU cage

500W PSU cage with optional second module fitted

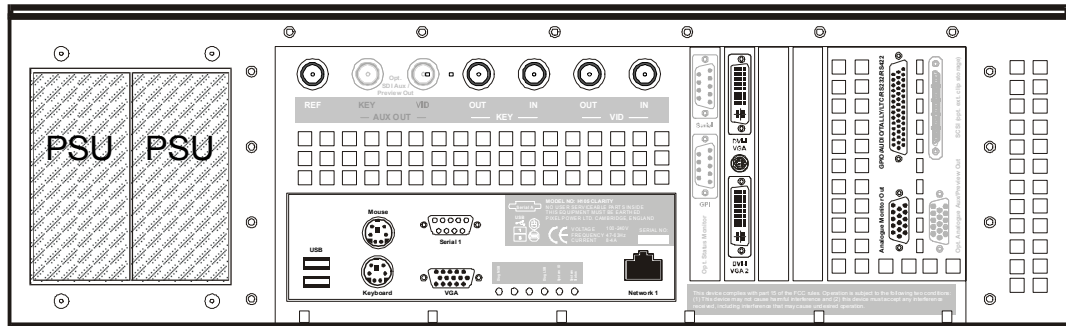


3.1.2.2 Current 3U Clarity systems

3.1.2.2.1 Clarity 300 STYLE A

[SD]

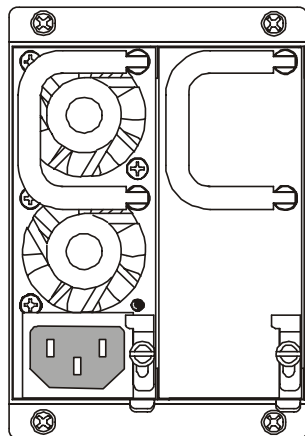
F-16 Clarity 300 STYLE A rear panel



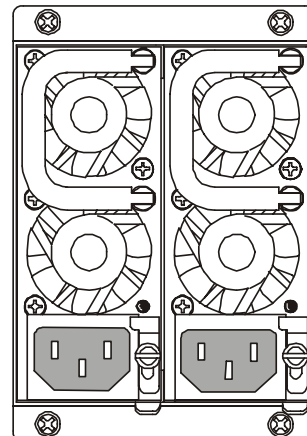
The Clarity 300 STYLE A chassis features a single, non-redundant (but redundant ready) PSU cage as standard. Also available is an optional second PSU module to enable dual redundancy.

F-17 Clarity 300 STYLE A PSU enclosures

Standard single non-redundant 460W PSU cage

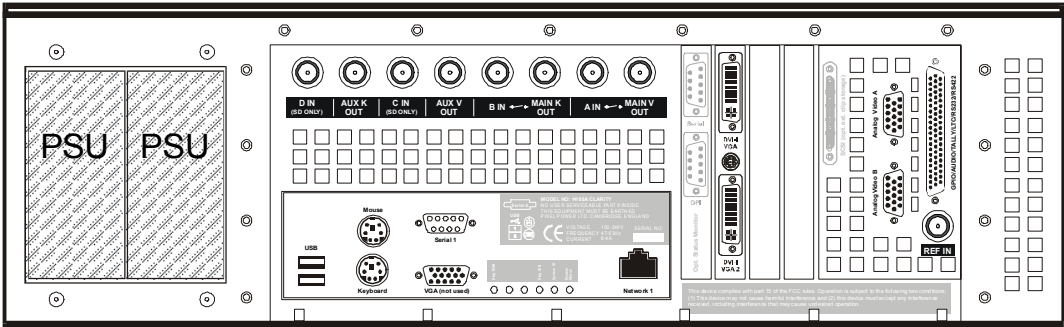


460W PSU cage with optional second module fitted



3. Product Overview and Features

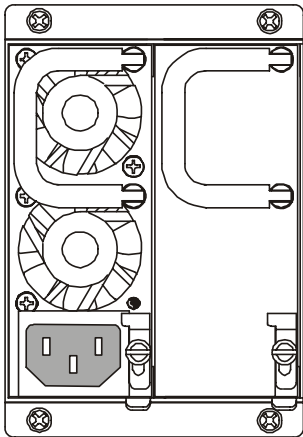
F-18 Clarity 3000 STYLE A rear panel



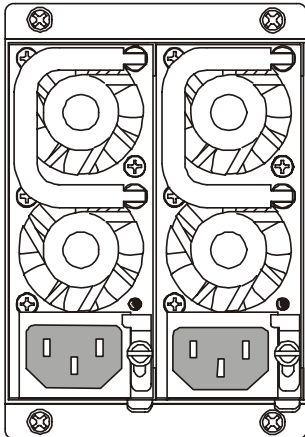
The Clarity 3000 STYLE A chassis features a single, non-redundant (but redundant ready) PSU cage as standard. Also available is an optional second PSU module to enable dual redundancy.

F-19 Clarity 3000 STYLE A PSU enclosures

Standard single non-redundant 460W PSU cage



460W PSU cage with optional second module fitted



3. Product Overview and Features

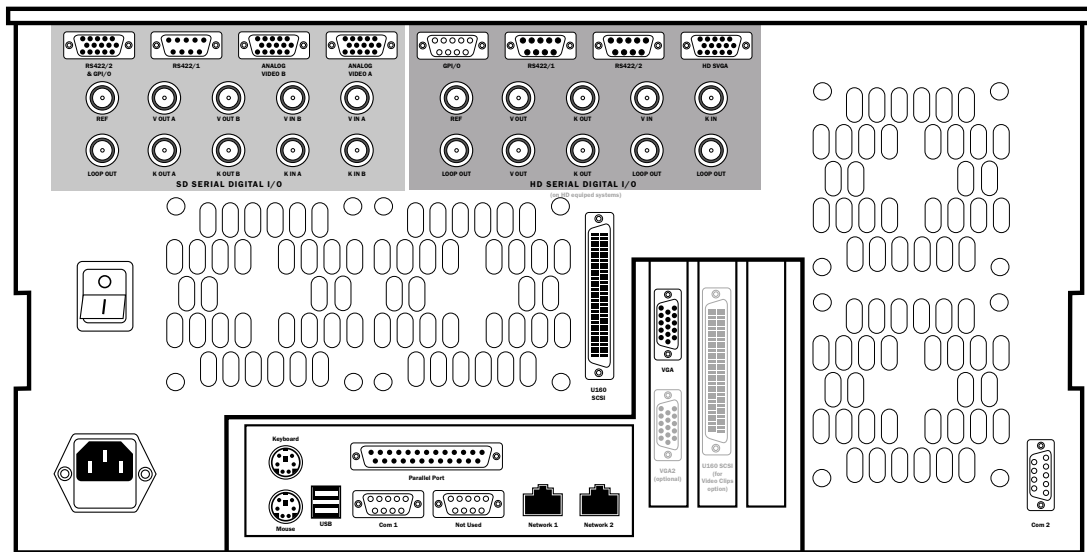
3.1.2.3 Legacy 5U Clarity systems

[LEGACY]

3.1.2.3.1 Clarity STYLE A

[SD/HD]

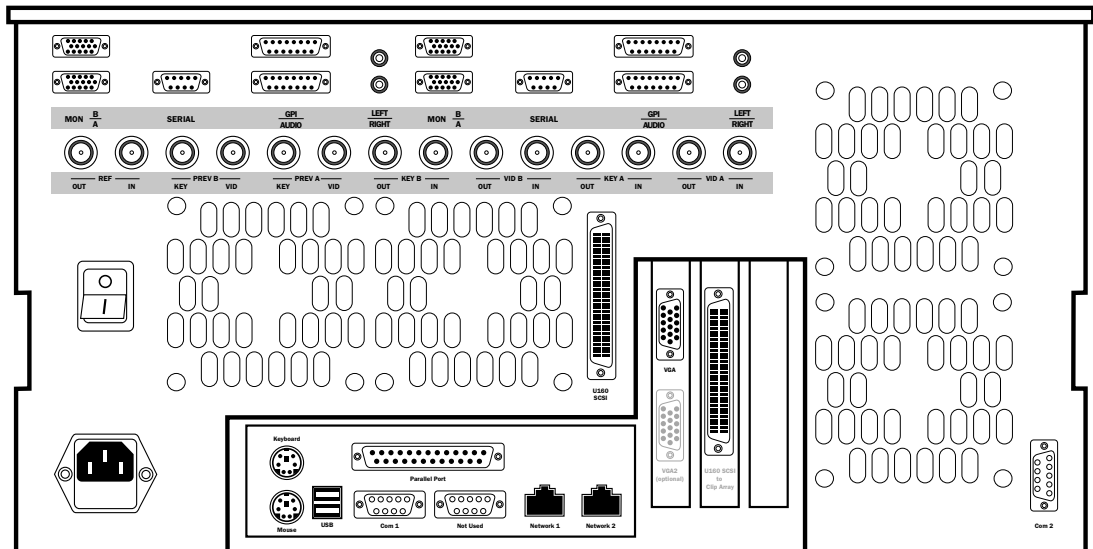
F-20 Clarity STYLE A rear panel [LEGACY]



3.1.2.3.2 Clarity 2 STYLE B

[SD]

F-21 Clarity 2 STYLE B rear panel [LEGACY]

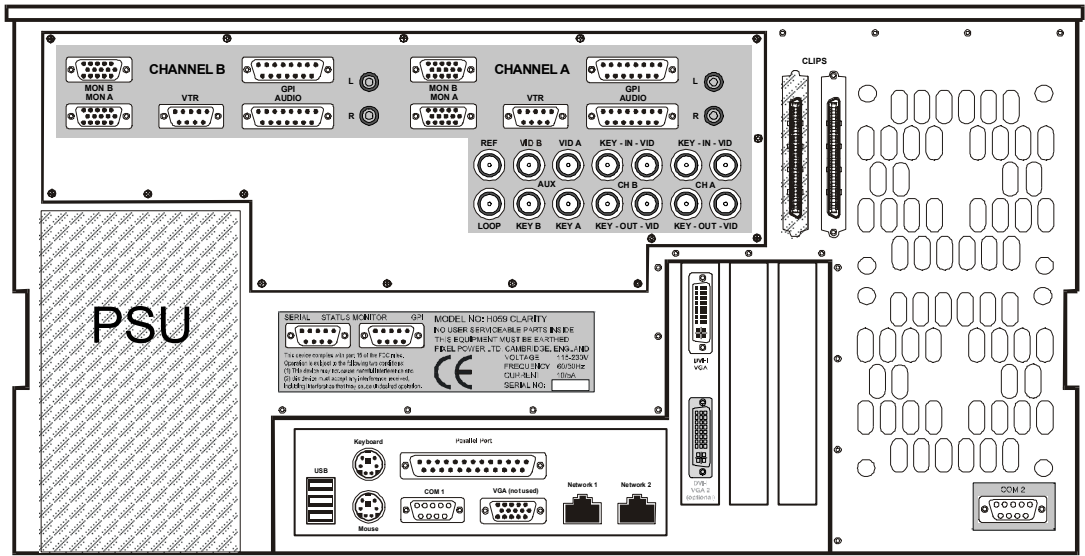


3. Product Overview and Features

3.1.2.3.3 Clarity 2 STYLE C

[SD]

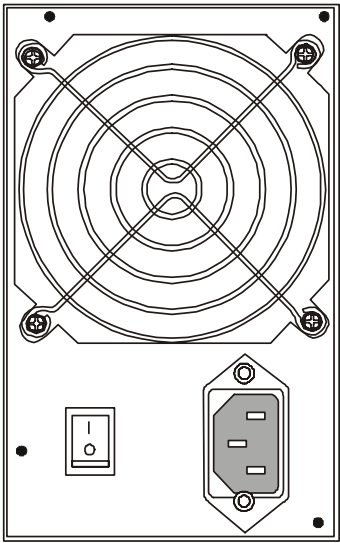
F-22 Clarity 2 STYLE C rear panel [LEGACY]



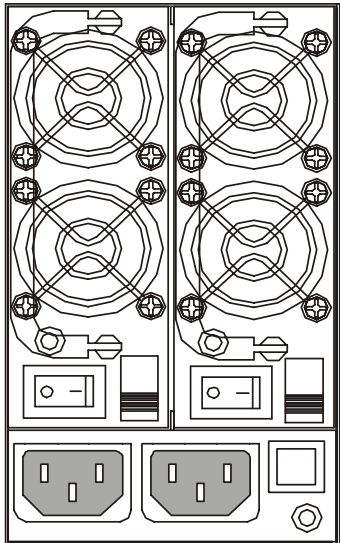
The Clarity 2 STYLE C chassis features a single non-redundant PSU as standard. Also available is an optional dual-redundant PSU.

F-23 Clarity 2 STYLE C PSU enclosures [LEGACY]

Standard single non-redundant 450W PSU



Optional dual-redundant 500W PSU



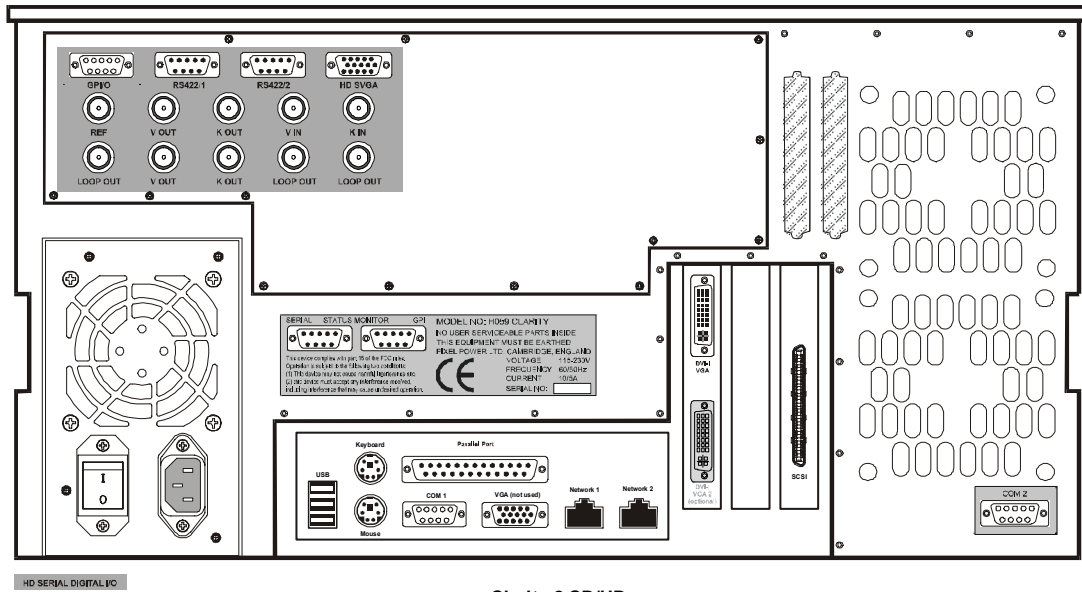
3. Product Overview and Features

3.1.2.3.4 Clarity 2 STYLE D

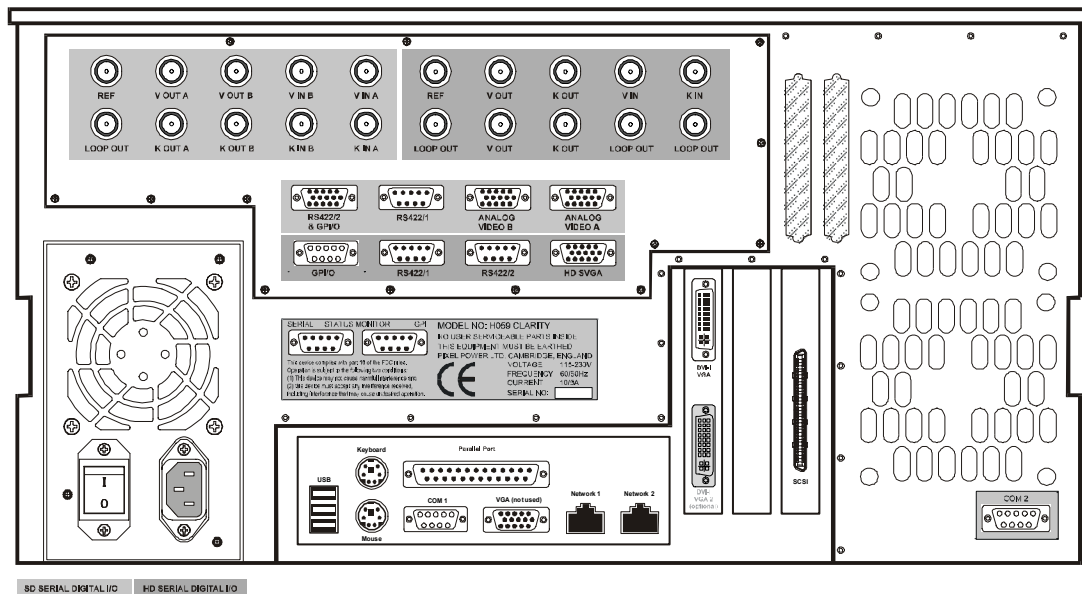
[SD/HD]

F-24 Clarity 2 STYLE D rear panel [LEGACY]

Clarity 2 HD

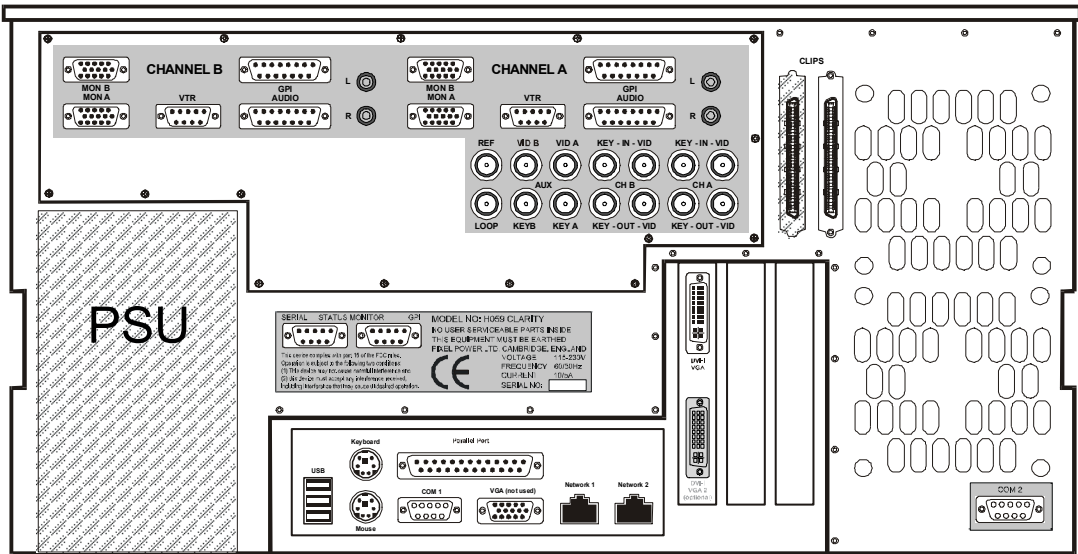


Clarity 2 SD/HD



3. Product Overview and Features

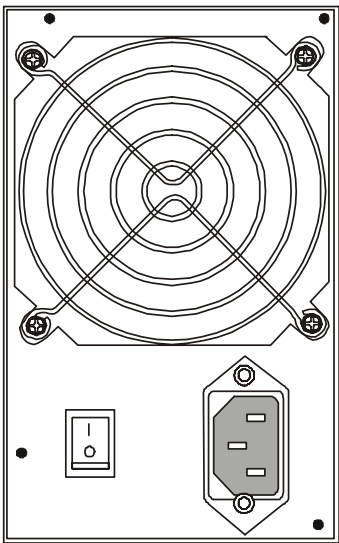
F-25 Clarity 500 STYLE A rear panel [LEGACY]



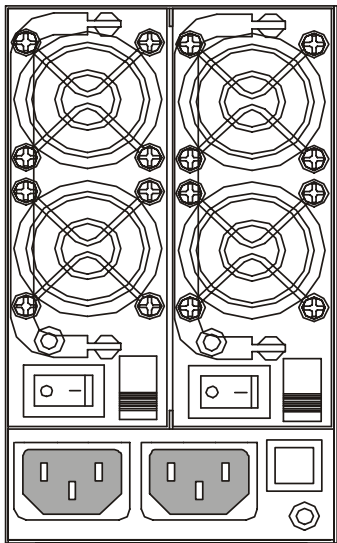
The Clarity 500 STYLE A chassis features a single non-redundant PSU as standard. Also available is an optional dual-redundant PSU.

F-26 Clarity 500 STYLE A PSU enclosures [LEGACY]

Standard single non-redundant 450W PSU



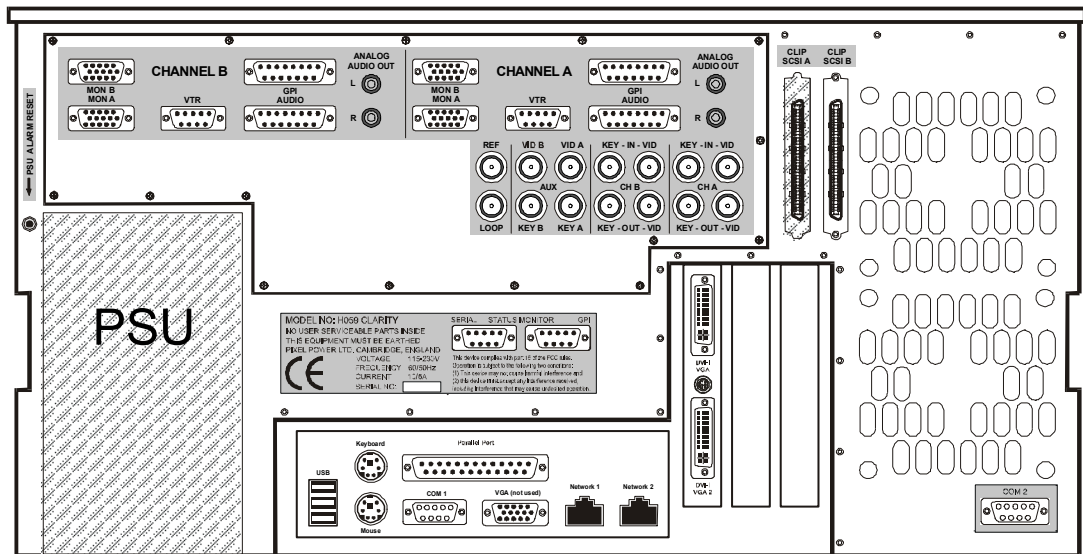
Optional dual-redundant 500W PSU



3.1.2.3.6 Clarity 500 STYLE B

[SD]

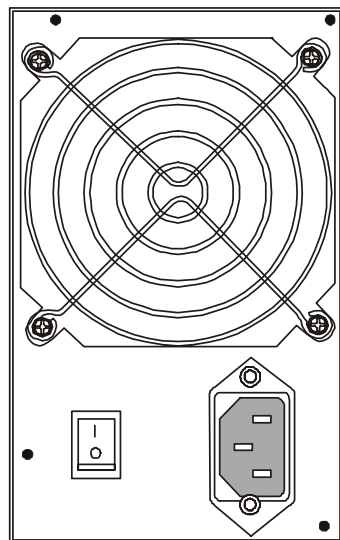
F-27 Clarity 500 STYLE B rear panel [LEGACY]



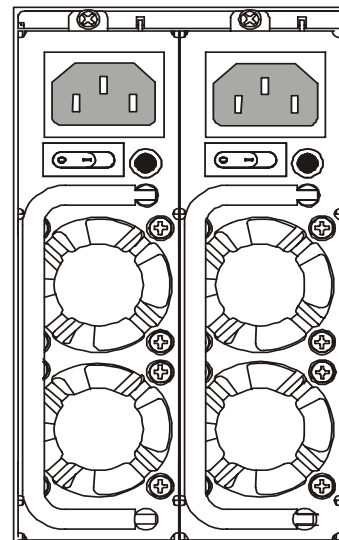
The Clarity 500 STYLE B chassis features a single non-redundant PSU as standard. Also available is an optional dual-redundant PSU.

F-28 Clarity 500 STYLE B PSU enclosures [LEGACY]

Standard single non-redundant 450W PSU



Optional dual-redundant 500W PSU



Additional features of the STYLE B rear panel over STYLE A include the **PSU ALARM RESET** button on the left side of the rear panel and the modified positioning of the **SERIAL** and **GPI STATUS MONITOR** 9-pin female D-type connectors to enable the fitment of differing motherboard types.

3. Product Overview and Features

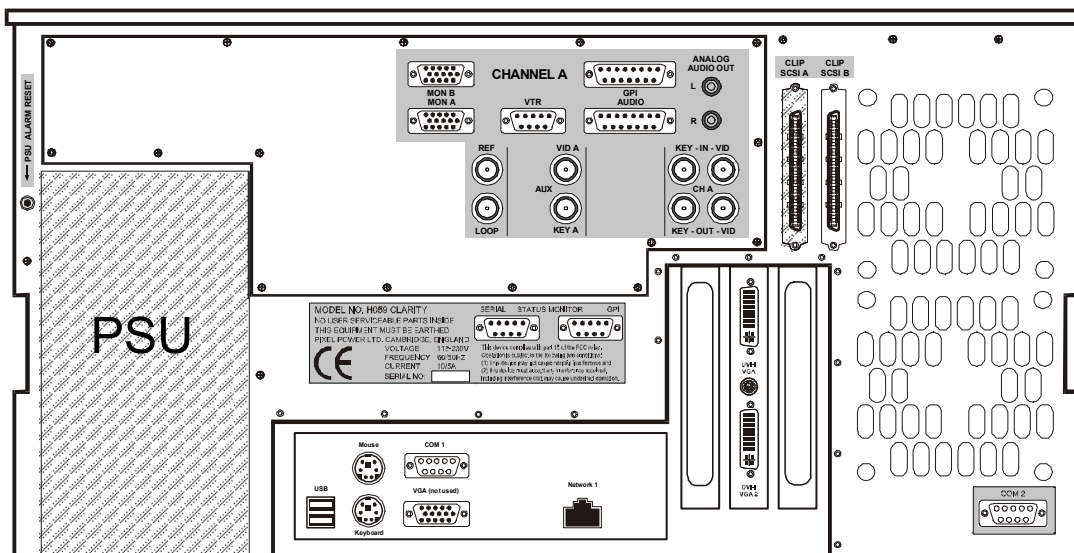
3.1.2.4 Current 5U Clarity systems

3.1.2.4.1 Clarity 500 STYLE C

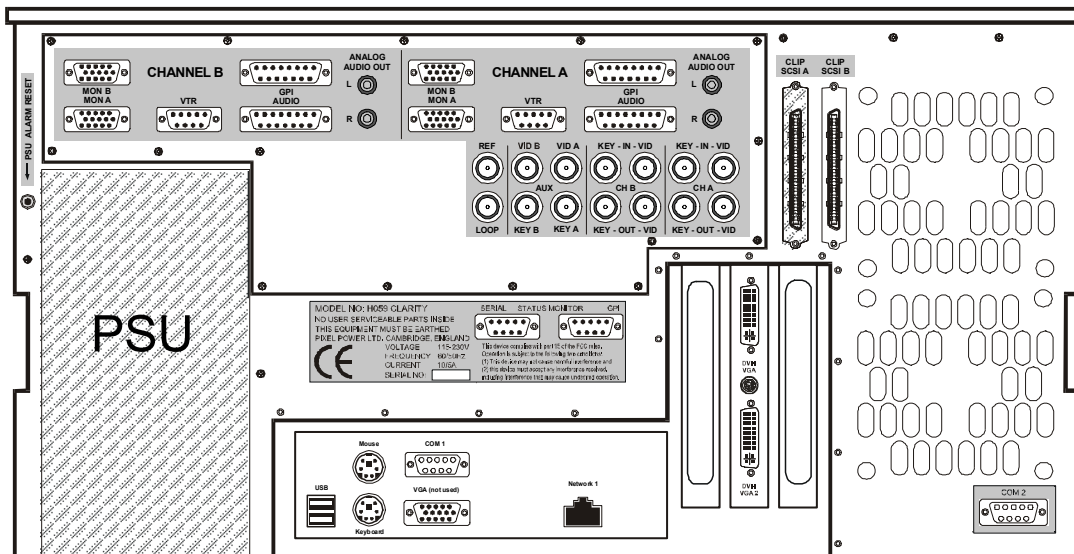
[SD]

F-29 Clarity 500 STYLE C rear panel

Single Channel



Dual Channel

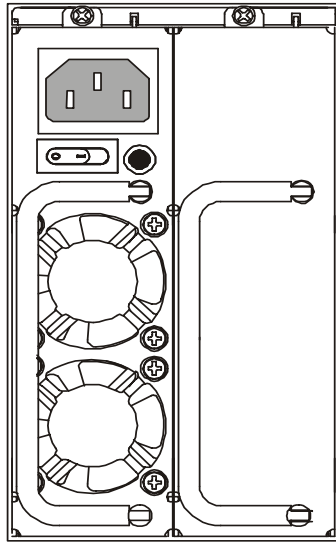


The Clarity 500 STYLE C chassis features a single, non-redundant (but redundant ready) PSU cage as standard. Also available is an optional second PSU module to enable dual redundancy.

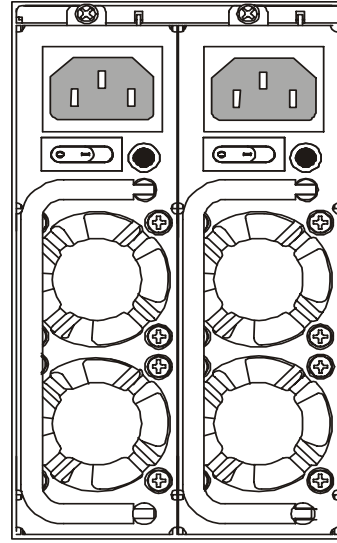
3. Product Overview and Features

F-30 Clarity 500 STYLE C PSU enclosures

Standard single non-redundant 500W PSU cage



500W PSU cage with optional second module fitted



Additional features of the STYLE C rear panel over STYLE B include support for PCI-Express graphics cards (revised location on rear panel). Also, the 25-pin female D-type parallel port is no longer supported.

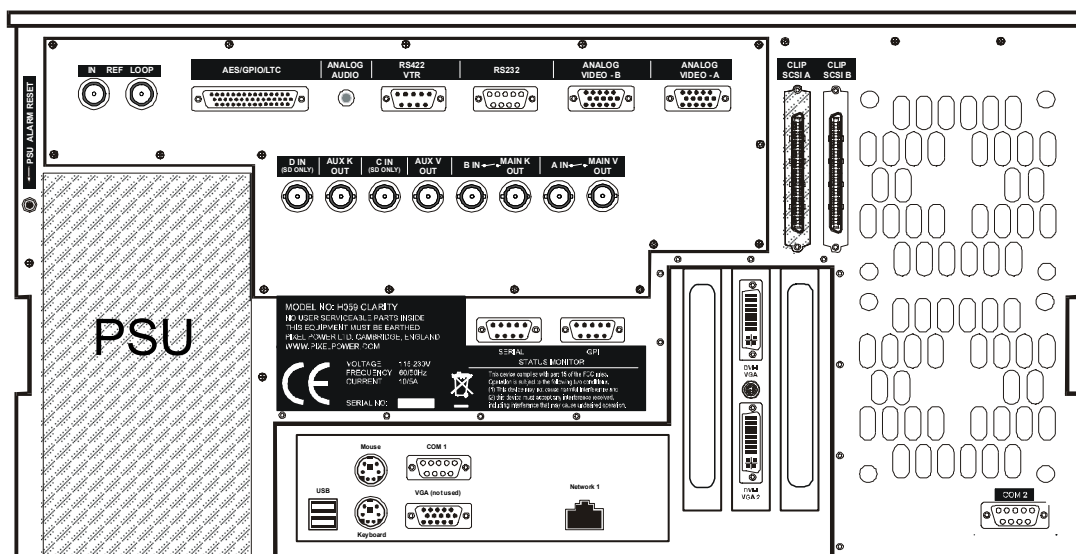
3. Product Overview and Features

3.1.2.4.2 Clarity 5000 STYLE A

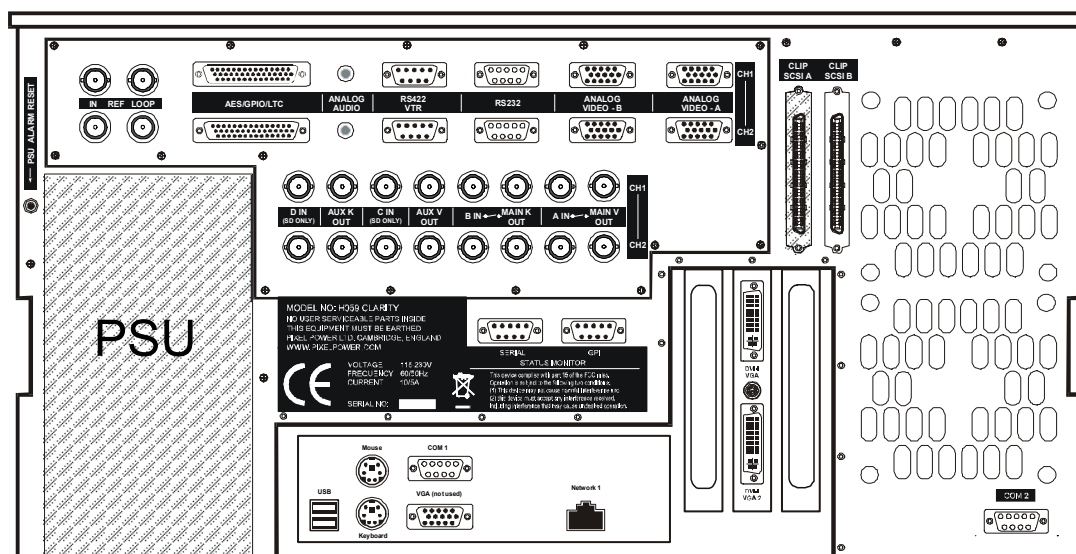
[SD/HD]

F-31 Clarity 5000 STYLE A rear panel

Single Channel



Dual Channel

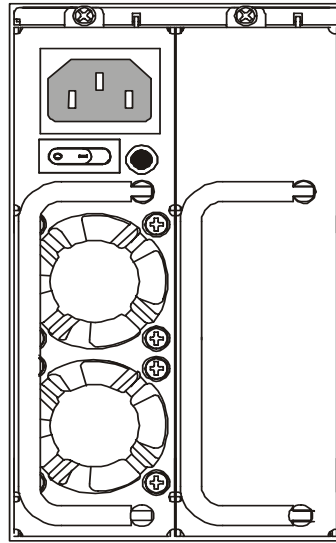


The Clarity 5000 STYLE A chassis features a single, non-redundant (but redundant ready) PSU cage as standard. Also available is an optional second PSU module to enable dual redundancy.

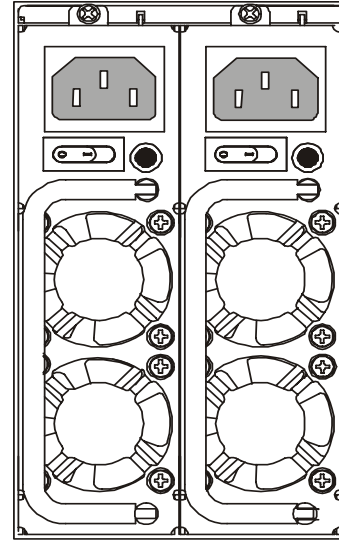
3. Product Overview and Features

F-32 Clarity 5000 STYLE A PSU enclosures

Standard single non-redundant 500W PSU cage



500W PSU cage with optional second module fitted



3. Product Overview and Features

3.1.3 Current CG Tools software products

All software products originate from the CG Tools software suite and the software product is selected depending on your chosen application.

3.1.3.1 Output via dedicated video hardware

3.1.3.1.1 Clarity HD/SD

Clarity is a Microsoft Windows XP® based **High Definition (HD)** and/or **Standard Definition (SD)** on-air and post-production graphics software application to be installed and used on Clarity system units (e.g. Clarity 100, 200, 300, 500 and 5000).

3.1.3.2 Output previewed via software user interface or created for hardware based systems

The powerful character generation tools of our Clarity software are made available for pre-production. Running stand-alone (Clarity PREP) or as a plug-in (Clarity Plugin) within an NLE environment, the software shares the rich CG and graphics toolset developed for Clarity HD/SD, making it the most flexible and efficient way to prepare high quality text and graphics.

3.1.3.2.1 Clarity PREP

Clarity PREP is a Microsoft Windows NT/2000/XP® based High Definition (HD) and Standard Definition (SD) off-air and post-production graphics solution comprising of editing software without dedicated graphics hardware (a Clarity system unit and peripherals).

It is designed for the following applications:

- the preparation and saving of Clarity HD/SD jobs;
- the preparation and rendering of material for other non-linear edit systems e.g. Avid® and Discreet software.

The software offers all the text handling power that you expect from a real broadcast character generator. The new Graphic Tools enables you to instantly define font, size, edge, shadow, texture and transparency. Text styles may be saved as presets to ensure consistency and allow global style changes during revisions. Text fields allow the creation of templates making common pages such as lower third displays fast and easy to create with absolute consistency.

Clarity PREP, used standalone in conjunction with Avid® Media Composer or Symphony, enables media content to be created and either stored in a job file for later recall within the Avid® Media Composer or Symphony, or saved as images with alpha channels and then imported into Avid® Media Composer or Symphony.

Rolls, crawls and other animated pages may be previewed at full resolution in the VGA display before being exported as image sequences, AVI, Quicktime® or OMF files. Clarity PREP, when running alongside Avid® Media Composer or Symphony editing software, integrates with the Avid® timeline as an AVX plugin, enabling the recall, creation and editing of pages in Clarity PREP alongside your usual editing environment.

3.1.3.2.2 Clarity Plugin

Clarity Plugin is a version of the Clarity PREP software that runs as an AVX plugin within the Avid® Media Composer or Symphony editing environment. Clarity Plugin is file compatible with Clarity hardware systems allowing you to leverage graphic assets uniformly throughout your facility. Advanced features like automatic subtitling from EBU or ASCII files make the editing process efficient. Providing the Clarity software feature set within the NLE environment enhances editing productivity and ensures consistent graphic presentation from post-production through to live production.

3.2 Software derivatives

There are three derivatives available within the Clarity, Clarity PREP and Clarity Plugin software products.

The TG derivative is not available with Clarity PREP and Clarity Plugin software products.

TG derivatives offer basic text generator functionality, while CG character generator derivatives provide more advanced functionality including cel animations, Cool Moves, enhanced shapes, live push back 2D DVE, mattes, picture cut and paste, Smart Moves, software playout, still store, subtitling and RS422 control, text spline and video grab.

In addition to the features found in CG derivatives, GX specification adds a comprehensive integrated paint system with freehand brushes, ramcorder (rotoscoping) and VTR control.

The Pixel Power design philosophy is that any material created on our full featured systems (CG or GX) can be played out on entry level systems (TG), regardless of complexity, animations or effects.

3.2.1 TG (Text Generator)

Designed as a fast and reliable text generator, TG is also ideal for playout of graphics prepared on either CG or GX, and offers a streamlined feature set optimised for live-to-air applications. Ideal for connection to automation and newsroom systems, TG provides a fast, reliable and flexible basic text generator at the heart of your production system.

3.2.2 CG (Character Generator)

CG builds on the feature set available in TG to offer a fully featured character generator with a tightly integrated still store. This gives you access not only to a comprehensive suite of character generator functions, but also the tools to create a vast range of visually stunning and sophisticated graphics. CG features Cool Move and Smart Move animation effects for text and logos, as well as cut and paste for image manipulation. With the standard RapidAction keyboard, the most common character generation functions are just a single keystroke away, making CG ideal for live broadcast environments, including control rooms, master control and remote production vehicles. Standard automation interfaces make CG an easy fit into sophisticated news and live sports environments.

3.2.3 GX (Graphics Generator)

Designed with the graphic artist in mind, GX is aimed at the graphics production area in a larger broadcaster or as a multipurpose graphics powerhouse in a smaller facility. GX provides much more than a dedicated character generator. Tight integration of paint and character generation tools streamlines your workflow, making GX exceptionally flexible and productive.

3. Product Overview and Features

3.3 Core product hardware features

3.3.1 Current 1U systems

3.3.1.1 Clarity 100 STYLE A (all software derivatives)

[SD]

3.3.1.1.1 Video and monitoring I/O specification

Digital SD REC601/656 video and key in and out. Analogue SD monitor output RGBK/YUVK/composite/YC software selectable.

3.3.1.1.2 Core system features

1RU Intel® SRF1300 server rack with single processor, Microsoft® Windows XP® Professional Workstation operating system, 1Gb DDR system memory, IDE system disk, CD-ROM, 1.44Mb floppy disk drive, single output VGA controller, 3 x USB ports, RJ45 RS232 port, 10/100 and 100/1000Mb ethernet ports.



3.3.1.1.3 Peripherals

500 Bitstream fonts, UK or US standard PC keyboard and optical wheel mouse.

3.3.1.1.4 Connectors

BNC connectors for SDI video and key in and out and analogue reference input, relay bypass on SDI video and key, downstream keyer, HD15 connector for analogue monitor output with RGB/YUV/Composite/YC, HD44 connector with 4 GPI, 4 GPO, tally for bypass, RS422 port, RS232 port, optional LTC in, optional two AES/EBU stereo pairs in/out and analogue audio monitoring.

3.3.2 Current 2U systems

3.3.2.1 Clarity 200 STYLE A (all software derivatives)

[SD]

3.3.2.1.1 Video and monitoring I/O specification

Digital SD REC601/656 video and key in and out. Analogue SD monitor output RGBK/YUVK/composite/YC software selectable.

3.3.2.1.2 Core system features

2RU Intel® SRF2300/SRF2400 server rack with dual processors, Microsoft® Windows XP® Professional Workstation operating system, 1Gb DDR system memory, IDE system disk, DVD drive, 1.44Mb floppy disk drive, single output VGA controller, 3 x USB ports, RJ45 RS232 port, RS232 port, 10/100Mb and 100/1000Mb ethernet ports.



3.3.2.1.3 Peripherals

500 Bitstream fonts, RapidAction keyboard and optical wheel mouse.

3.3.2.1.4 Connectors

BNC connectors for SDI video and key in and out and analogue reference input, relay bypass on SDI video and key, downstream keyer, HD15 connector for analogue monitor output with RGB/YUV/Composite/YC, HD44 connector with 4 GPI, 4 GPO, tally for bypass, RS422 port, RS232 port, optional LTC in, optional two AES/EBU stereo pairs in/out and analogue audio monitoring.

3.3.3 Current 3U systems

3.3.3.1 Clarity 300 STYLE A (all software derivatives)

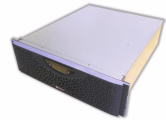
[SD]

3.3.3.1.1 Video and monitoring I/O specification

Digital SD REC601/656 video and key in and out. Analogue SD monitor output RGBK/YUVK/composite/YC software selectable.

3.3.3.1.2 Core system features

3RU Pixel Power chassis with dual processors, Microsoft® Windows XP® Professional operating system, 1Gb DDR system memory, dual mirrored hot swappable SATA system disks, DVD writer +/- R/RW, 1.44Mb floppy disk drive, dual DVI output PCI Express graphics controller, 3 x USB ports, RS232 port, 10/100/1000Mb ethernet port.



3.3.3.1.3 Peripherals

500 Bitstream fonts, RapidAction keyboard and optical wheel mouse.

3.3.3.1.4 Connectors

BNC connectors for SDI video and key in and out and analogue reference input, relay bypass on SDI video and key, downstream keyer, HD15 connector for analogue monitor output with RGB/YUV/Composite/YC, HD44 connector with 4 GPI, 4 GPO, tally for bypass, RS422 port, RS232 port, optional LTC in, optional two AES/EBU stereo pairs in/out and analogue audio monitoring.

3.3.3.2 Clarity 3000 STYLE A (all software derivatives)

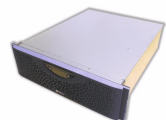
[SD/HD]

3.3.3.2.1 Video and monitoring I/O specification

Digital HD SMPTE292M video and key in and out (video format software selectable). Analogue HD monitor output RGBK/YUVK. Digital SD REC601/656 video and key in and out. Analogue SD monitor output RGBK/YUVK/composite/YC software selectable.

3.3.3.2.2 Core system features

3RU Pixel Power chassis with dual processors, Microsoft® Windows XP® Professional operating system, 1Gb DDR system memory, dual mirrored hot swappable SATA system disks, DVD writer +/- R/RW, 1.44Mb floppy disk drive, dual DVI output PCI Express graphics controller, 3 x USB ports, RS232 port, 10/100/1000Mb ethernet port.



3.3.3.2.3 Peripherals

500 Bitstream fonts, RapidAction keyboard and optical wheel mouse.

3.3.3.2.4 Connectors

BNC connectors for HD-SDI or SD-SDI video and key in and out, HD-SDI or SD-SDI video and key preview out, analogue reference and two additional SD-SDI inputs. Relay bypass on video and key and AES audio, downstream keyer, 2 x HD15 connector for analogue monitor output (HD/SD) with RGB/YUV, Composite (SD only) and YC (SD only), HD62 connector for 4 GPI, 4 GPO, tally for bypass, tally for watchdog, optional LTC in, optional four AES/EBU stereo pairs in/out and analogue stereo audio monitoring, RS232/422 VTR control port and RS232 port.

3. Product Overview and Features

3.3.4 Legacy 5U systems

[LEGACY]

The table below defines the core hardware features of legacy 5U system units. For details information refer to earlier versions of this manual,

T-18 Legacy 5U system core product features [LEGACY]

| | Feature | Derivative | | | | | |
|-------------|--|------------|-----------|------------|-----------|-----------|-------------|
| | | Clarity | Clarity 2 | | | | Clarity 500 |
| | | STYLE A | STYLE B | STYLE C | STYLE D | STYLE A | STYLE B |
| Hardware | 5U graphics system chassis with dual system processors | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Internal hard drive | SCSI | SCSI | IDE | IDE | IDE | IDE |
| | Internal optical drive | CD-R/RW | CD-R/RW | DVD+/-R/RW | | | |
| | 1.44Mb floppy disk drive | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Downstream keyer/mixer per channel | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Video input with key | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | 100 BaseTX networking | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | 1000 BaseTX networking (Gigabit) | N/A | N/A | ✓ | N/A | ✓ | ✓ |
| | External SCSI port(s) | ULTRA 160 | ULTRA 160 | ULTRA 320 | ULTRA 160 | ULTRA 320 | ULTRA 320 |
| Peripherals | RapidAction keyboard | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Mouse | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

3.3.5 Current 5U systems

3.3.5.1 Clarity 500 STYLE C (all software derivatives)

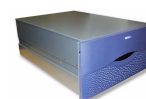
[SD]

3.3.5.1.1 Video and monitoring I/O specification

Digital SD REC601/656 video and key in and out. Analogue SD monitor output RGBK/YUVK/composite/YC software selectable.

3.3.5.1.2 Core features

5RU Pixel Power chassis with dual processors, Microsoft® Windows XP® Professional Workstation operating system, 1Gb DDR system memory, SATA or IDE system disk, DVD writer +/- R/RW, 1.44Mb floppy disk drive, dual DVI output PCI Express graphics controller, 2 x USB ports, 2 x RS232 ports and 1 x 100/1000Mb ethernet port.



3.3.5.1.3 Peripherals

500 Bitstream fonts, RapidAction keyboard and optical wheel mouse.

3.3.5.1.4 Connectors (dual channel system)

BNC connectors for 2 x SDI video and key in and out, 2 x SDI video and key preview out and analogue reference with loop through, relay bypass on SDI video and key for each channel, dual downstream keyers, 4 x HD15 connector for analogue monitor output with RGB/YUV/Composite/YC, 2 x 15 way D connector with optional LTC in and optional two AES/EBU stereo pairs in/out, 2 x phono connector for

optional stereo audio monitoring, 2 x RS232/422 VTR control ports, 2 x 15 way D connector with 4 GPI, 2 GPO and tally for bypass.

3.3.5.2 Clarity 5000 STYLE A (all software derivatives)

[SD/HD]

3.3.5.2.1 Video and monitoring I/O specification

Digital HD SMPTE292M video and key in and out (video format software selectable). Analogue HD monitor output RGBK/YUVK. Digital SD REC601/656 video and key in and out. Analogue SD monitor output RGBK/YUVK/composite/YC software selectable.

3.3.5.2.2 Core features

5RU Pixel Power chassis with dual with dual processors, Microsoft® Windows XP® Professional Workstation operating system, 1Gb DDR system memory, SATA or IDE, DVD writer +/- R/RW, 1.44Mb floppy disk drive, dual DVI output PCI Express graphics controller, 2 x USB ports, 2 x RS232 ports and 1 x 100/1000Mb ethernet port.



3.3.5.2.3 Peripherals

500 Bitstream fonts, RapidAction keyboard and optical wheel mouse.

3.3.5.2.4 Connectors (dual channel system)

BNC connectors for 2 x HD-SDI or SD-SDI video and key in and out, 2 x HD-SDI or SD-SDI video and key preview out and 2 x analogue reference with loop through, relay bypass on video and key for each channel, dual downstream keyers, 4 x HD15 connector for analogue monitor output (HD/SD) with RGB/YUV, Composite (SD only) and YC (SD only), 2 x HD44 connector for 4 GPI, 2 GPO, tally for bypass, tally for watchdog, optional LTC in and optional four AES/EBU stereo pairs in/out, 2 x 3.5mm jack for optional analogue stereo audio monitoring, 2 x RS232/422 VTR control ports, 2 x RS232 ports.

3. Product Overview and Features

3.4 Detailed descriptions of product features and functionality

For more information on the descriptions of basic standard features for all products and derivatives and optional licensed features and other product options, refer to the CG Tools Reference (H059W004). Refer to [“1.6 Further resources”](#) on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "About CG Tools" section in the "Welcome" section. The reference is available in HTML Help and Adobe Acrobat .PDF formats from the **Help** menu of your desired CG Tools software application or from the **Start>Pixel Power** program group.



H059W004 INDEX KEYWORD

[\[cg tools\]](#) [\[software derivatives\]](#) [\[basic standard\]](#) [\[optional\]](#)

Please also refer to the Clarity product brochure for the latest options available for your system unit. Contact Pixel Power sales or support for more advice on available options and pricing. Refer to [“22.2 Contacting Pixel Power for support and other enquires”](#) on page 22.1 for more information.

3.5 What next?

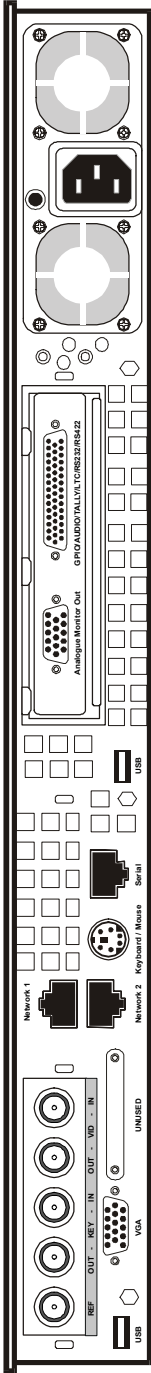
Refer to [“4. Rear Panels, Specification, and Connectors \[CLARITY\]”](#) on page 4.1 for more information.

4. Rear Panels, Specification, and Connectors [CLARITY]

4.1 Clarity 100 STYLE A rear panel layout, specification and connectors

4.1.1 Rear panel layout

F-33 Clarity 100 STYLE A rear panel layout



4.1.2 Specification

The following table details specifications for the Clarity 100 STYLE A rear panel system:

T-19 Clarity 100 STYLE A specification

| | | |
|-------------------------|---------------------------|---------|
| Physical | | 4.1.2.1 |
| Height (mm) | 43 | |
| Width (mm) | 430 | |
| Depth (mm) | 410 | |
| Weight | 13Kg | |
| Power | | 4.1.2.2 |
| Requirements | 100-127V/200-240V 60/50Hz | |
| Connector | 1 x IEC 3-pin | |
| Current and Consumption | 4.96/2.48A, 350W | |

| | |
|---|--|
| Fuse | Non-User replaceable |
| Environmental | |
| 4.1.2.3 | |
| Operating temperature range | +10 °C to +35 °C with the maximum rate of change not to exceed 10 °C per hour |
| Non-operating humidity | >90%, non-condensing @ 35 °C |
| Storage/Memory | |
| 4.1.2.4 | |
| System Hard Disk | IDE |
| System RAM | 1Gb DDR system memory expandable to 2Gb |
| Removable | 1.44 Mb PC compatible floppy disk CD-ROM drive (DVD-RW drive optional at time of order) |
| Video (menu selectable) | |
| 4.1.2.5 | |
| SD | 525/60 or 625/50 |
| Aspect Ratio (SD) | 4:3, 14:9, 16:9 or user defined |
| SD Outputs (per channel) | |
| 4.1.2.6 | |
| Video Digital | REC601/656 serial digital video and key with internal 10-bit downstream keyer. Software switchable 4:2:2:4 or 4:4:4 operation. REC601/656 serial digital preview and key. |
| Analogue | Single monitoring output software selectable to RGB, YUV, YC or Composite with key and sync. |
| GPO contact closure trigger outputs | x2 via 44-pin HD D-type female socket (x4 with H096 revision B) |
| SD Inputs | |
| 4.1.2.7 | |
| Video Digital (per channel) | REC601/656 serial digital video and key input. Input frame re-synchroniser to allow non-locked sources and simplify system installations. Can also be software selected to run in minimum delay configuration. 4:2:2:4 or 4:4:4 operation with pass through of embedded audio and data. |
| Ref | Colour black or mixed syncs with loop through and internal software selectable terminator. System will free-run with no sync source present. Menu control of lock timing. |
| Bypass GPI contact closure trigger inputs (per channel) | x4 via 44-pin HD D-type female socket |
| Interface Connections | |
| 4.1.2.8 | |
| PS/2 (keyboard, mouse) | x1 |

| | |
|--|--------------|
| SVGA 15-pin HD D-type female | x1 |
| VTR RS422 via 44-pin HD D-type female | x1 |
| SERIAL RS232 via 44-pin HD D-type female | x1 |
| SERIAL RS232 RJ45 (via 9-pin D-type female breakout) | x1 |
| Ethernet (RJ45 10/100/1000 Base Tx) (Gigabit) | x2 |
| USB | x2 (USB 2.0) |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.1.3 Rear panel connectors

The following connectors are provided:

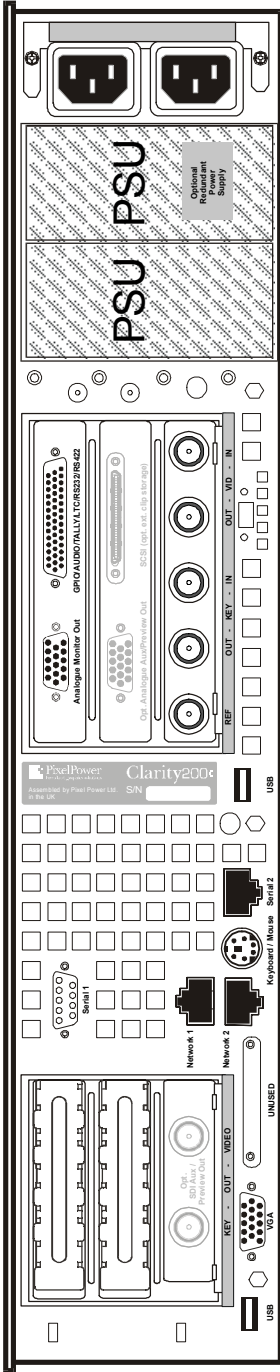
T-20 Clarity 100 STYLE A rear panel connectors

| Connector/Area | Description |
|---|--|
| Power Socket | IEC 3-pin Power Socket |
| PSU | Refer to “5.1 Clarity 100 STYLE A system [SD]” on page 5.1 for more information. |
| Signalling | |
| GPIO/AUDIO/TALLY/LTC/RS232/RS422 | 44-pin female HD D-type enabling the following: a) GPI/GPO (General purpose contact closure input and output); b) Digital audio in/out; c) Analogue audio out; d) Bypass tally; e) Longitudinal Timecode (LTC) in/out; f) RS232 serial; g) RS422 serial VTR/machine control. For more information on creating the relevant cable to use with this connector, refer to “6.1.4.15 Clarity 100, 200 and 300 44-pin breakout communication cable data” on page 6.41 for more information. |
| Reference | |
| REF | 75Ω BNC Analogue reference input |
| SD Analogue Video | |
| ANALOGUE MONITOR OUT | 15-pin female HD D-type SD analogue monitor output |
| VIDEO/KEY IN/OUT | |
| KEY IN | 75Ω BNC REC601/656 SD digital video input |
| VID IN | 75Ω BNC REC601/656 SD digital video key input |
| VID OUT | 75Ω BNC REC601/656 SD digital video output |
| KEY OUT | 75Ω BNC REC601/656 SD digital video key output |
| Peripherals, Serial, Networking and VGA | |
| KEYBOARD / MOUSE | PS/2 Keyboard/Mouse connector (connection via supplied PS/2 breakout cable) |
| USB | Universal Serial Bus 2.0 (USB) connector |
| SERIAL | Serial RS232 female RJ-45 connector (serial connection via 9-pin D-type female breakout cable) |
| NETWORK 1 and 2 | Ethernet 10/100/1000 GIGABIT RJ45 connector |
| VGA | 15-pin female HD D-type VGA output |

4.2 Clarity 200 STYLE A rear panel layout, specification and connectors

4.2.1 Rear panel layout

F-34 Clarity 200 STYLE A rear panel layout



4.2.2 Specification

The following table details specifications for the Clarity 200 STYLE A rear panel system:

T-21 Clarity 200 STYLE A specification

| Physical | | 4.2.2.1 |
|-------------------------|---------------------------|---------|
| Height (mm) | 89 | |
| Width (mm) | 430 | |
| Depth (mm) | 648 | |
| Weight | 20Kg | |
| Power | | 4.2.2.2 |
| Requirements | 100-127V/200-240V 60/50Hz | |
| Connector | 2 x IEC 3-pin | |
| Current and Consumption | 5.2/2.6A 500W | |

4. Rear Panels, Specification, and Connectors [CLARITY]

| | | |
|---|---|--|
| Fuse | Non-User replaceable | |
| Environmental | | |
| 4.2.2.3 | | |
| Operating temperature range | +10 °C to +35 °C with the maximum rate of change not to exceed 10 °C per hour | |
| Non-operating humidity | >90%, non-condensing @ 35 °C | |
| Storage/Memory | | |
| 4.2.2.4 | | |
| System Hard Disk | IDE | |
| System RAM | 1Gb DDR system memory expandable to 2Gb | |
| Removable | 1.44 Mb PC compatible floppy disk CD/CD-R/CD-RW/DVD-RW drive | |
| Video (menu selectable) | | |
| 4.2.2.5 | | |
| SD | 525/60 or 625/50 | |
| Aspect Ratio (SD) | 4:3, 14:9, 16:9 or user defined | |
| SD Outputs (per channel) | | |
| 4.2.2.6 | | |
| Video Digital | REC601/656 serial digital video and key with internal 10-bit downstream keyer. Software switchable 4:2:2:4 or 4:4:4 operation. REC601/656 serial digital preview and key. Additional auxiliary serial digital preview and key output optional (PP8432; requires digital auxiliary output PP8436) | |
| Analogue | Single monitoring output software selectable to RGB, YUV, YC or Composite with key and sync. Additional monitoring/preview output optional (PP8432; optional digital auxiliary output [LICENSED] PP8436) | |
| GPO contact closure trigger outputs | x2 via 44-pin HD D-type female socket (x4 with H096 revision B) | |
| SD Input | | |
| 4.2.2.7 | | |
| Video Digital (per channel) | REC601/656 serial digital video and key input. Input frame re-synchroniser to allow non-locked sources and simplify system installations. Can also be software selected to run in minimum delay configuration. 4:2:2:4 or 4:4:4 operation with pass through of embedded audio and data. | |
| Ref | Colour black or mixed syncs with loop through and internal software selectable terminator. System will free-run with no sync source present. Menu control of lock timing. | |
| Bypass GPI contact closure trigger inputs (per channel) | x4 via 44-pin HD D-type female socket | |
| Audio (per channel) (OPTIONAL, PP8433) | | |
| 4.2.2.8 | | |

| | |
|--|--|
| AES/EBU | x2 AES inputs and x2 outputs per channel via 44-pin D-type female socket |
| Embedded | Each channel includes de-embed/re-embed capability with ducking |
| Analogue | Each channel provides analogue audio monitoring via 44-pin D-type female socket at -10 dbm |
| Interface Connections | |
| 4.2.2.9 | |
| PS/2 (keyboard, mouse) | x1 |
| SVGA 15-pin HD D-type female | x1 |
| VTR RS422 via 44-pin HD D-type female | x1 |
| SERIAL RS232 via 44-pin HD D-type female | x1 |
| SERIAL RS232 RJ45 (via 9-pin D-type female breakout) | x1 |
| SERIAL RS232 9-pin D-type male | x1 |
| SCSI 68-pin VHDCI D-type ULTRA SCSI 320 female | x1 (Optional, requires optional digital auxiliary output [LICENSED] PP8436) |
| Ethernet (RJ45 10/100/1000 Base Tx) (Gigabit) | x2 |
| USB | x2 (USB 2.0) |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.2.3 Rear panel connectors

The following connectors are provided:

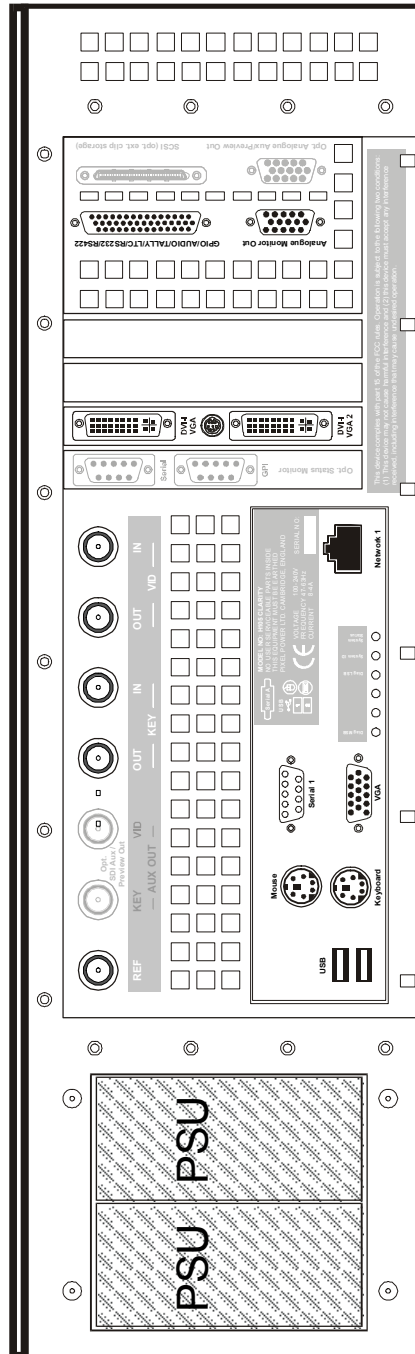
T-22 Clarity 200 STYLE A rear panel connectors

| Connector/Area | Description |
|---|--|
| Power Socket | IEC 3-pin Power Socket |
| PSU | Refer to “5.2 Clarity 200 STYLE A system [SD]” on page 5.3 for more information. |
| Signalling | |
| GPIO/AUDIO/TALLY/LTC/RS232/RS422 | 44-pin female HD D-type enabling the following: a) GPI/GPO (General purpose contact closure input and output); b) Digital audio in/out; c) Analogue audio out; d) Bypass tally; e) Longitudinal Timecode (LTC) in/out; f) RS232 serial; g) RS422 serial VTR/machine control. For more information on creating the relevant cable to use with this connector, refer to “6.1.4.15 Clarity 100, 200 and 300 44-pin breakout communication cable data” on page 6.41 for more information. |
| Reference | |
| REF | 75Ω BNC Analogue reference input |
| SD Analogue Video | |
| ANALOGUE MONITOR OUT | 15-pin female HD D-type SD analogue monitor output |
| OPT. ANALOGUE AUX/ PREVIEW OUT | 15-pin female HD D-type SD auxiliary/preview analogue monitor output (requires optional digital auxiliary output PP8436) |
| SCSI | Requires optional digital auxiliary output PP8436 |
| SCSI (OPT. EXT. CLIP STORAGE) | 68-pin female VHDCI ULTRA SCSI 320 connector for connection of external clip storage device |
| VIDEO/KEY IN/OUT | |
| KEY IN | 75Ω BNC REC601/656 SD digital video input |
| VID IN | 75Ω BNC REC601/656 SD digital video key input |
| VID OUT | 75Ω BNC REC601/656 SD digital video output |
| KEY OUT | 75Ω BNC REC601/656 SD digital video key output |
| Opt. SDI Aux / Preview Out | Requires optional digital auxiliary output PP8436 |
| VID OUT | 75Ω BNC REC601/656 SD digital video output |
| KEY OUT | 75Ω BNC REC601/656 SD digital video key output |
| Peripherals, Serial, Networking and VGA | |
| KEYBOARD / MOUSE | PS/2 Keyboard/Mouse connector (connection via supplied PS/2 breakout cable) |
| USB | Universal Serial Bus 2.0 (USB) connector |
| SERIAL 1 | Serial RS232 9-pin female D-type connector |
| SERIAL 2 | Serial RS232 female RJ-45 connector (serial connection via 9-pin D-type female breakout cable) |
| NETWORK 1 and 2 | Ethernet 10/100/1000 GIGABIT RJ45 connector |
| VGA | 15-pin female HD D-type VGA output |

4.3 Clarity 300 STYLE A rear panel layout, specification and connectors

4.3.1 Rear panel layout

F-35 Clarity 300 STYLE A rear panel layout



4.3.2 Specification

The following table details specifications for the Clarity 300 STYLE A rear panel system:

T-23 Clarity 300 STYLE A specification

Physical

| | |
|-------------|---------------------------------|
| Height (mm) | 133 |
| Width (mm) | 432 (483 including front panel) |
| Depth (mm) | 532 (555 including front panel) |
| Weight | 22Kg |

4.3.2.1

| | | |
|-------------------------------------|---|---------|
| Power | | 4.3.2.2 |
| Requirements | 100-240V 47-63Hz | |
| Connector | 1 x IEC 3-pin with single PSU; 2 x IEC 3-pin with dual-redundant PSU | |
| Current and Consumption | 8/4A 460W | |
| Fuse | Non-User replaceable | |
| Environmental | | 4.3.2.3 |
| Operating temperature range | +5 to +35 °C | |
| Non-operating humidity | 20 to 80 % (non condensing) | |
| Storage/Memory | | 4.3.2.4 |
| System Hard Disk | 2x SATA system hard disks in RAID 0 array configuration | |
| System RAM | 1Gb DDR system memory expandable to 2Gb | |
| Removable | 1.44 Mb PC compatible floppy disk CD/CD-R/CD-RW/DVD-RW drive | |
| Video (menu selectable) | | 4.3.2.5 |
| SD | 525/60 or 625/50 | |
| Aspect Ratio (SD) | 4:3, 14:9, 16:9 or user defined | |
| SD Outputs (per channel) | | 4.3.2.6 |
| Video Digital | REC601/656 serial digital video and key with internal 10-bit downstream keyer. Software switchable 4:2:2:4 or 4:4:4 operation. REC601/656 serial digital preview and key. Additional auxiliary serial digital preview and key output optional (PP8432; requires digital auxiliary output PP8436) | |
| Analogue | Single monitoring output software selectable to RGB, YUV, YC or Composite with key and sync. Additional monitoring/preview output optional (PP8432; optional digital auxiliary output [LICENSED] PP8436) | |
| GPO contact closure trigger outputs | x2 via 44-pin HD D-type female socket | |
| SD Inputs | | 4.3.2.7 |
| Video Digital (per channel) | REC601/656 serial digital video and key input. Input frame re-synchroniser to allow non-locked sources and simplify system installations. Can also be software selected to run in minimum delay configuration. 4:2:2:4 or 4:4:4 operation with pass through of embedded audio and data. | |

| | |
|---|--|
| Ref | Colour black or mixed syncs with loop through and internal software selectable 75 terminator. System will free-run with no sync source present. Menu control of lock timing. |
| Bypass GPI contact closure trigger inputs (per channel) | x4 via 44-pin HD D-type female socket |
| Audio (per channel) (OPTIONAL, PP8433) | |
| AES/EBU | x2 AES inputs and x2 outputs per channel via 44-pin HD D-type female socket |
| Embedded | Each channel includes de-embed/re-embed capability with ducking |
| Analogue | Each channel provides analogue audio monitoring via 44-pin D-type female socket at -10 dbm |
| Monitoring (OPTIONAL, Part number TBA) | |
| GPI 9-pin D-type female | x1 |
| RS422/SERIAL RS232 switchable 9-pin D-type female | x1 |
| Interface Connections | |
| PS/2 (keyboard, mouse) | x2 |
| SVGA 24-pin DVI-I female | x2 |
| VTR RS422 via 44-pin HD D-type female | x1 |
| SERIAL RS232 via 44-pin HD D-type female | x1 |
| SERIAL RS232 9-pin D-type male | x1 |
| SCSI 68-pin VHDCI D-type ULTRA SCSI 320 female | x1 (Optional, requires optional digital auxiliary output [LICENSED] PP8436) |
| Ethernet (RJ45 10/100/1000 Base Tx) (Gigabit) | x1 |
| USB | x2 (USB 2.0) on rear panel, x1 (USB 2.0) on front panel |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.3.3 Rear panel connectors

The following connectors are provided:

T-24 Clarity 300 STYLE A rear panel connectors

| Connector/Area | Description |
|---|--|
| PSU | Refer to “5.3 Clarity 300 STYLE A and Clarity 3000 STYLE A systems” on page 5.8 for more information. |
| Signalling | |
| GPIO/AUDIO/TALLY/LTC/RS232/RS422 | 44-pin female HD D-type enabling the following: a) GPI/GPO (General purpose contact closure input and output); b) Digital audio in/out; c) Analogue audio out; d) Bypass tally; e) Longitudinal Timecode (LTC) in/out; f) RS232 serial; g) RS422 serial VTR/machine control. For more information on creating the relevant cable to use with this connector, refer to “6.1.4.15 Clarity 100, 200 and 300 44-pin breakout communication cable data” on page 6.41 for more information. |
| Reference | |
| REF | 75Ω BNC Analogue reference input |
| SD Analogue Video | |
| ANALOGUE MONITOR OUT | 15-pin female HD D-type SD analogue monitor output |
| OPT. ANALOGUE AUX/ PREVIEW OUT | 15-pin female HD D-type SD auxiliary/preview analogue monitor output (requires optional digital auxiliary output PP8436) |
| SCSI | Requires optional digital auxiliary output PP8436 |
| SCSI (OPT. EXT. CLIP STORAGE) | 68-pin female VHDCI ULTRA SCSI 320 connector for connection of external clip storage device |
| VIDEO/KEY IN/OUT | |
| KEY IN | 75Ω BNC REC601/656 SD digital video input |
| VID IN | 75Ω BNC REC601/656 SD digital video key input |
| VID OUT | 75Ω BNC REC601/656 SD digital video output |
| KEY OUT | 75Ω BNC REC601/656 SD digital video key output |
| Opt. SDI Aux / Preview Out | Requires optional digital auxiliary output PP8436 |
| AUX VID OUT | 75Ω BNC REC601/656 SD digital video output |
| AUX KEY OUT | 75Ω BNC REC601/656 SD digital video key output |
| Peripherals, Serial, Networking and VGA | |
| KEYBOARD | PS/2 Keyboard connector |
| MOUSE | PS/2 Mouse connector |
| USB | Universal Serial Bus 2.0 (USB) connector |
| SERIAL 1 | Serial RS232 9-pin female D-type connector |
| NETWORK 1 | Ethernet 10/100/1000 GIGABIT RJ45 connector |
| DVI-I VGA | 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |
| DVI-I VGA2 | Second 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |
| Opt. Status Monitor | Requires optional status monitor option TBA |
| SERIAL | 9-pin female D-type RS422 serial VTR/machine control OR RS232 port (switchable) |

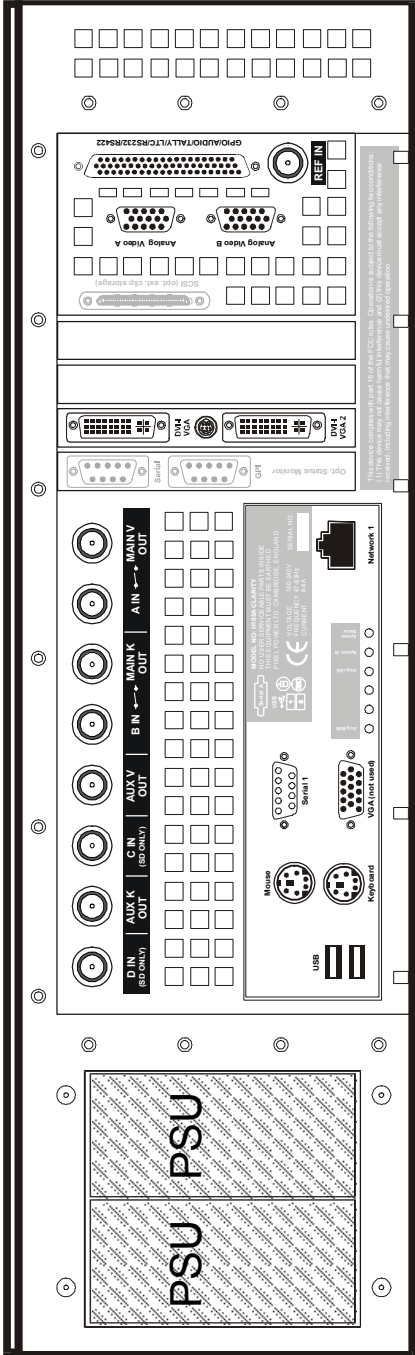
4. Rear Panels, Specification, and Connectors [CLARITY]

| Connector/Area | Description |
|----------------|--|
| GPI | 9-pin female D-type connector GPI port |

4.4 Clarity 3000 STYLE A rear panel layout, specification and connectors

4.4.1 Rear panel layout

F-36 Clarity 3000 STYLE A rear panel layout



4.4.2 Specification

The following table details specifications for the Clarity 3000 STYLE A rear panel system:

T-25 Clarity 3000 STYLE A specification

| Physical | | 4.4.2.1 |
|-------------|---------------------------------|---------|
| Height (mm) | 133 | |
| Width (mm) | 432 (483 including front panel) | |
| Depth (mm) | 532 (555 including front panel) | |
| Weight | 22 Kg | |

| | | | |
|-----------------------------|--|--|--|
| Power | | 4.4.2.2 | |
| Requirements | | 100-240V 47-63Hz | |
| Connector | | 1 x IEC 3-pin with single PSU; 2 x IEC 3-pin with dual-redundant PSU | |
| Current and Consumption | | 8/4A 450W | |
| Fuse | | Non-User replaceable | |
| Environmental | | 4.4.2.3 | |
| Operating temperature range | | +5 to +35 °C | |
| Non-operating humidity | | 20 to 80 % (non condensing) | |
| Storage/Memory | | 4.4.2.4 | |
| System Hard Disk | | 2x SATA system hard disks in RAID 0 array configuration | |
| System RAM | | 1Gb DDR system memory expandable to 2Gb | |
| Removable | | 1.44 Mb PC compatible floppy disk CD/CD-R/CD-RW/DVD-RW drive | |
| Video (menu selectable) | | 4.4.2.5 | |
| SD | | 525/60 or 625/50 | |
| HD | | 720/60P 720/59.94P 720/50P 720/30P 720/29.97P 720/25P 720/24P 720/23.98P 1080/60I 1080/59.94I 1080/50I 1080/30P 1080/29.97P 1080/25P 1080/24P 1080/23.98P 1080/30Psf 1080/29.97Psf 1080/25Psf 1080/24Psf 1080/23.98Psf | 720 line, 60 frames per second, progressive scan 720 line, 59.94 frames per second, progressive scan 720 line, 50 frames per second, progressive scan 720 line, 30 frames per second, progressive scan 720 line, 29.97 frames per second, progressive scan 720 line, 25 frames per second, progressive scan 720 line, 24 frames per second, progressive scan 720 line, 23.98 frames per second, progressive scan 1080 line, 60 fields per second, interlaced 1080 line, 59.94 fields per second, interlaced 1080 line, 50 fields per second, interlaced 1080 line, 30 frames per second, progressive scan 1080 line, 29.97 frames per second, progressive scan 1080 line, 25 frames per second, progressive scan 1080 line, 24 frames per second, progressive scan 1080 line, 23.98 frames per second, progressive scan 1080 line, 30 frames per second, progressive scan, segmented frame 1080 line, 29.97 frames per second, progressive scan, segmented frame 1080 line, 25 frames per second, progressive scan, segmented frame 1080 line, 24 frames per second, progressive scan, segmented frame 1080 line, 23.98 frames per second, progressive scan, segmented frame |
| Aspect Ratio | | 4:3, 14:9, 16:9 or user defined | |

SD/HD Outputs (per channel)

4.4.2.6

| | |
|-------------------------------------|---|
| Video Digital | REC601/656 or SMPTE292M serial digital video and key with internal 10-bit downstream keyer. REC601/656 or SMPTE292M dedicated auxiliary preview output and key. Optionally configurable as additional program channels with basic text and stills capability. Software switchable 4:2:2:4 or 4:4:4:4 operation. |
| Analogue | Monitoring output (s) software selectable to RGB, YUV, YC (SD only), Composite all with key and sync (SD only). |
| GPO contact closure trigger outputs | x4 via 62-pin HD D-type female socket |

SD/HD Inputs (per channel)

4.4.2.7

| | | |
|---|---------------------------------------|--|
| Video Digital (user definable input configuration) | SD mode | Each channel provides a total of four REC601/656 serial digital video inputs, configurable as two video + key pairs or four discrete inputs. Each input features 2D DVE capability and automatic relay bypass. 4:2:2:4 or 4:4:4:4 operation with pass through of embedded audio and data. Input frame re-synchroniser to allow non-locked sources and simplify system installations. |
| | HD mode | Each channel has two SMPTE292M serial digital video inputs that may be used as video + key or video 1 + video 2. Each input features 2D DVE capability and automatic relay bypass. Input frame re-synchroniser to allow non-locked sources and simplify system installations. |
| | SD mode | Colour black or mixed syncs with loop through and internal software selectable terminator. System will free-run with no sync source present. Menu control of lock timing. |
| | HD mode | Tri-level or bi-level HD sync with loop through and internal software selectable termination. |
| Bypass GPI contact closure trigger inputs (per channel) | x4 via 62-pin HD D-type female socket | |

Audio (per channel)

4.4.2.8

| | | |
|----------|--|--|
| AES/EBU | x2 AES inputs and x2 outputs (4 stereo pairs) with relay bypass per channel via 62-pin HD D-type female socket. | |
| Embedded | Each channel includes de-embed/re-embed capability with ducking. Embedded audio can be extracted from all digital inputs, mixed with internal clips and re-embedded on the program video output. | |
| Analogue | Each channel provides analogue audio monitoring via 62-pin HD D-type female socket. | |

Monitoring (OPTIONAL, Part number TBA)

4.4.2.9

| | |
|---|----|
| GPI 9-pin D-type female | x1 |
| RS422/SERIAL RS232 switchable 9-pin D-type female | x1 |

| Interface Connections | | 4.4.2.10 |
|--|---|----------|
| PS/2 (keyboard, mouse) | x2 | |
| SVGA 24-pin DVI-I female | x2 | |
| VTR RS422 via 44-pin HD D-type female | x1 | |
| SERIAL RS232 via 44-pin HD D-type female | x1 | |
| SERIAL RS232 9-pin D-type male | x1 | |
| SCSI 68-pin VHDCI D-type ULTRA SCSI 320 female | x1 (Optional, video clip option [LICENSED] PF8503) | |
| Ethernet (RJ45 10/100/1000 Base Tx) (Gigabit) | x1 | |
| USB | x2 (USB 2.0) on rear panel, x1 (USB 2.0) on front panel | |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.4.3 Rear panel connectors

The following connectors are provided:

T-26 Clarity 3000 STYLE A rear panel connectors

| Connector/Area | Description |
|---|--|
| PSU | Refer to “5.3 Clarity 300 STYLE A and Clarity 3000 STYLE A systems” on page 5.8 for more information. |
| Signalling | |
| GPIO/AUDIO/TALLY/LTC/RS232/RS422 | 62-pin female HD D-type enabling the following: a) GPI/GPO (General purpose contact closure input and output); b) Digital audio in/out; c) Analogue audio out; d) Bypass/watchdog tally; e) Longitudinal Timecode (LTC) in/out; f) RS232 serial; g) RS422 serial VTR/machine control. |
| Reference | |
| REF | 75Ω BNC Analogue reference input |
| SD Analogue Video | |
| ANALOG VIDEO A | 15-pin female HD D-type SD/HD analogue monitor output |
| ANALOG VIDEO B | 15-pin female HD D-type SD/HD analogue monitor output |
| SCSI | |
| SCSI (OPT. EXT. CLIP STORAGE) | 68-pin female VHDCI ULTRA SCSI 320 connector for connection of external clip storage device |
| Digital SD/HD Auxiliary Outputs | |
| AUX V OUT | 75Ω BNC REC601/656 SD or 1.45Gb SDI SMPTE292M HD digital video preview output |
| AUX K OUT | 75Ω BNC REC601/656 SD or 1.45Gb SDI SMPTE292M HD digital video key preview output |
| Main Digital SD/HD Video I/O | |
| MAIN V OUT | 75Ω BNC REC601/656 SD or 1.45Gb SDI SMPTE292M HD digital video output |
| MAIN K OUT | 75Ω BNC REC601/656 SD or 1.45Gb SDI SMPTE292M HD digital video key output |
| Assignable Digital SD/HD Video I/O | Assignable connector operation configured using CG Tools software |
| A IN | 75Ω BNC REC601/656 SD or 1.45Gb SDI SMPTE292M HD assignable digital video/key input |
| B IN | 75Ω BNC REC601/656 SD or 1.45Gb SDI SMPTE292M HD assignable digital video/key input |
| C IN | 75Ω BNC REC601/656 SD assignable digital video/key input |
| D IN | 75Ω BNC REC601/656 SD assignable digital video/key input |
| Peripherals, Serial, Networking and VGA | |
| KEYBOARD | PS/2 Keyboard connector |
| MOUSE | PS/2 Mouse connector |
| USB | Universal Serial Bus 2.0 (USB) connector |
| SERIAL 1 | Serial RS232 9-pin female D-type connector |
| NETWORK 1 | Ethernet 10/100/1000 GIGABIT RJ45 connector |
| DVI-I VGA | 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |
| DVI-I VGA2 | Second 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |

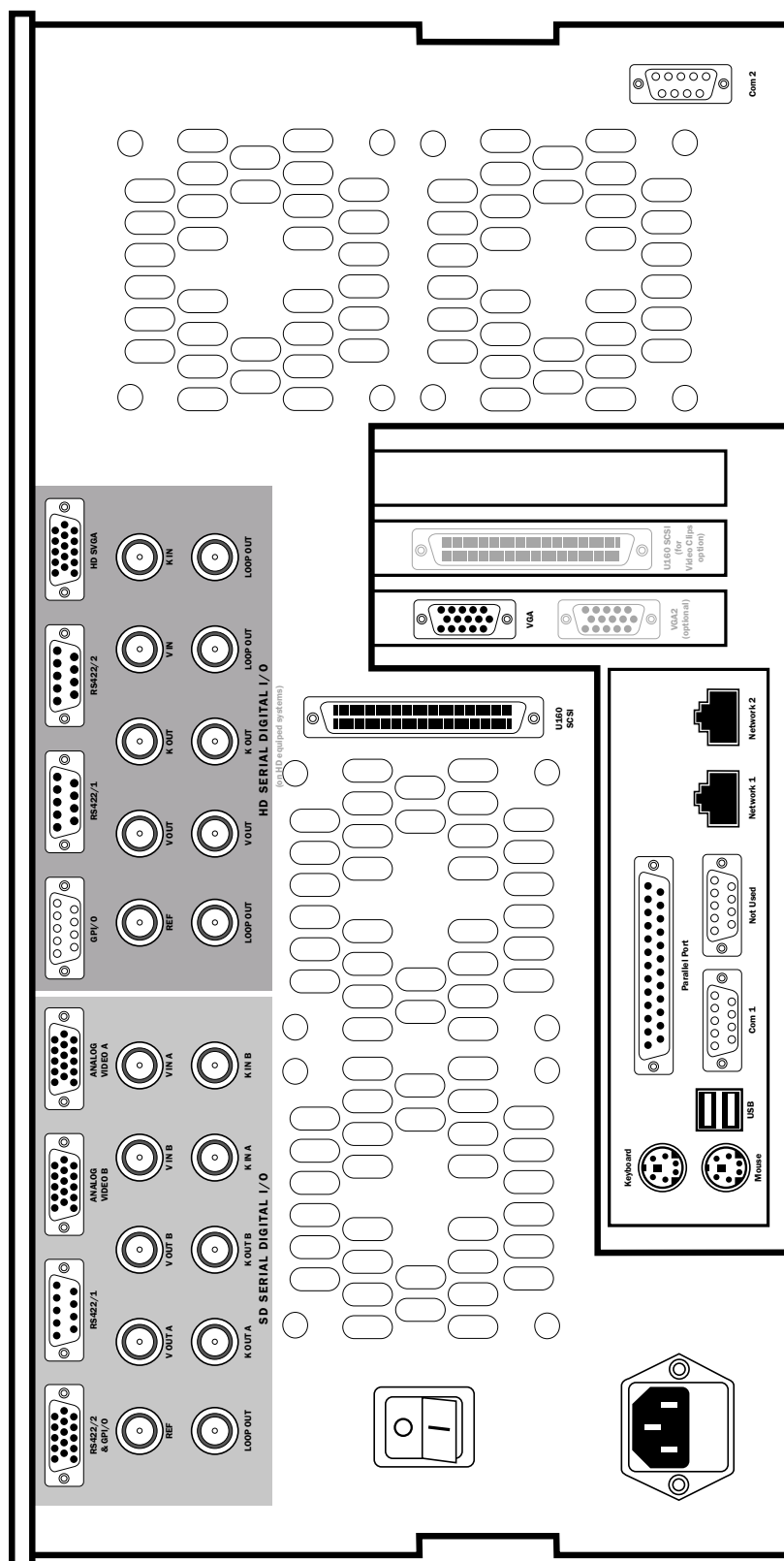
4. Rear Panels, Specification, and Connectors [CLARITY]

| Connector/Area | Description |
|---------------------|--|
| Opt. Status Monitor | Requires optional status monitor option TBA |
| SERIAL | 9-pin female D-type RS422 serial VTR/machine control OR RS232 port (switchable) |
| GPI | 9-pin female D-type connector GPI port |

4.5 Clarity STYLE A rear panel layout, specification and connectors

4.5.1.1 Rear panel layout (dual channel)

F-37 Clarity STYLE A rear panel layout (dual channel) [LEGACY]



4.5.2 Specification

The following table details specifications for the Clarity STYLE A rear panel system:

T-27 Clarity STYLE A specification [LEGACY]

| | | |
|---|--|---------|
| Physical | | 4.5.2.1 |
| Height (mm) | 220 | |
| Width (mm) | 437 | |
| Depth (mm) | 614 | |
| Weight | 21Kg | |
| Power | | 4.5.2.2 |
| Requirements | 100-240V 50/60Hz | |
| Connector | IEC 3-pin | |
| Current and Consumption | 4/2A 350W | |
| Fuse | T3.15A 240V T6.3A 110V | |
| Environmental | | 4.5.2.3 |
| Operating temperature range | +5 to +35 °C | |
| Operating humidity range | 20 to 80 % (non condensing) | |
| Storage/Memory | | 4.5.2.4 |
| System Hard Disk | SCSI | |
| System RAM | 1Gb DDR system memory expandable to 2Gb | |
| Removable | 1.44 Mb PC compatible floppy disk 250 Mb internal Iomega ZIP drive CD/CDR/CDRW/DVD drive | |
| Video (menu selectable, dependant on hardware derivative) | | 4.5.2.5 |
| SD | 525/60 or 625/50 | |

| | |
|---|---|
| HD | 1080i, 1080p/af or 720p @ 60/59.94/50/24/25 Hz |
| Aspect Ratio (SD) | 4:3, 14:9, 16:9 or user defined |
| SD Outputs (per channel) | |
| 4.5.2.6 | |
| Video Digital | REC601/656 serial digital video and key with internal 10-bit downstream keyer. Software switchable 4:2:2:4 or 4:4:4 operation. REC601/656 serial digital preview and key. |
| Analogue | Dual monitoring outputs software selectable to RGB, YUV, YC, Composite all with key and sync. |
| GPO contact closure trigger outputs | x2 via 15-pin HD D-type female socket |
| SD Inputs | |
| 4.5.2.7 | |
| Video (per channel) | REC601/656 serial digital video and key input. Input frame re-synchroniser to allow non-locked sources and simplify system installations. Can also be software selected to run in minimum delay configuration. 4:2:2:4 or 4:4:4 operation with pass through of embedded audio and data. |
| Ref | Colour black or mixed syncs with loop through and internal software selectable 75 terminator. System will free-run with no sync source present. Menu control of lock timing. |
| Bypass GPI contact closure trigger inputs (per channel) | x4 via 15-pin HD D-type female socket |
| HD Outputs (per channel) | |
| 4.5.2.8 | |
| Video Digital | SMPT292M serial digital video and key with dual connectors. 10-bit downstream keyer. 4:2:2:4 or 4:4:4 operation. |
| Analogue | Low cost SVGA connector for monitoring in RGBHV format in accordance with SMPTE recommended practice. |
| GPO contact closure trigger outputs (per channel) | x2 via 15-pin SD D-type male socket |
| HD Inputs | |
| 4.5.2.9 | |
| Video (per channel) | SMPT292M serial digital and key with active loop through. |
| Ref | Tri-level or bi-level HD sync with loop through and internal software selectable termination. |
| Bypass GPI contact closure trigger inputs (per channel) | x2 via 15-pin SD D-type male socket |
| Interface Connections | |
| 4.5.2.10 | |
| PS/2 (keyboard, mouse) | x2 |
| SVGA 15-pin D-type female | x1 (dual available at extra cost) |

| | |
|---|----|
| VTR RS422/SERIAL RS232 switchable 9-pin D-type female | x2 |
| SERIAL RS232 9-pin D-type male | x2 |
| SERIAL RS232 9-pin D-type female | |
| SERIAL RS232 25-pin D-type female | |
| SCSI 68-pin HD D-type ULTRA SCSI 160 female | x2 |
| Ethernet (RJ45 10/100 Base Tx) | x2 |
| USB | x2 |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.5.3 Rear panel connectors

The following connectors are provided:

T-28 Clarity STYLE A rear panel connectors [LEGACY]

| Connector | Description |
|---|---|
| Power Socket | IEC 3-pin Power Socket |
| SD Serial, GPI/O and Analogue Video | |
| RS422/2 & GPI/O | 15-pin female HD D-type RS422 serial VTR/machine control AND GPI/GPO (General purpose contact closure inputs and outputs) port |
| RS422/1 | 9-pin female D-type RS422 serial VTR/machine control port |
| ANALOGUE VIDEO B | 15-pin female HD D-type SD analogue monitor output (Channel A) |
| ANALOGUE VIDEO A | 15-pin female HD D-type SD analogue monitor output (Channel B) |
| HD GPI/O, Serial and SVGA Digital Video | |
| GPI/O | 9-pin male D-type GPI/GPO (General purpose contact closure inputs and outputs) port |
| RS422/1 | 9-pin female D-type RS422 serial VTR/machine control port |
| RS422/2 | 9-pin female D-type RS422 serial VTR/machine control port |
| HD SVGA | 15-pin female HD D-type SVGA high density analogue monitor output |
| SCSI | |
| U160 SCSI | 68-pin female HD D-type ULTRA SCSI 160 connector for external SCSI devices |
| U160 SCSI (for Video Clips option) | Optional 68-pin female HD D-type ULTRA SCSI 160 connector for connection of external clip storage device |
| Digital SD Video I/O | |
| V OUT A | 75Ω BNC REC601/656 SD digital video output (Channel A) |
| K OUT A | 75Ω BNC REC601/656 SD digital video key output (Channel A) |
| V OUT B | 75Ω BNC REC601/656 SD digital video output (Channel B) |
| K OUT B | 75Ω BNC REC601/656 SD digital video key output (Channel B) |
| V IN B | 75Ω BNC REC601/656 SD digital video input (Channel B) |
| K IN B | 75Ω BNC REC601/656 SD digital video key input (Channel B) |
| V IN A | 75Ω BNC REC601/656 SD digital video input (Channel A) |
| K IN A | 75Ω BNC REC601/656 SD digital video key input (Channel A) |
| Digital HD Video I/O | If the output sampling is configured as 4:4:4:4, K OUT and K IN also carry the additional chrominance samples |
| V OUT | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video output |
| V OUT | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video output (duplicate) |
| K OUT | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video key output |
| K OUT | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video key output (duplicate) |
| V IN | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video input |
| LOOP OUT | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video active loop through of the V IN signal |
| K IN | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video key input |

4. Rear Panels, Specification, and Connectors [CLARITY]

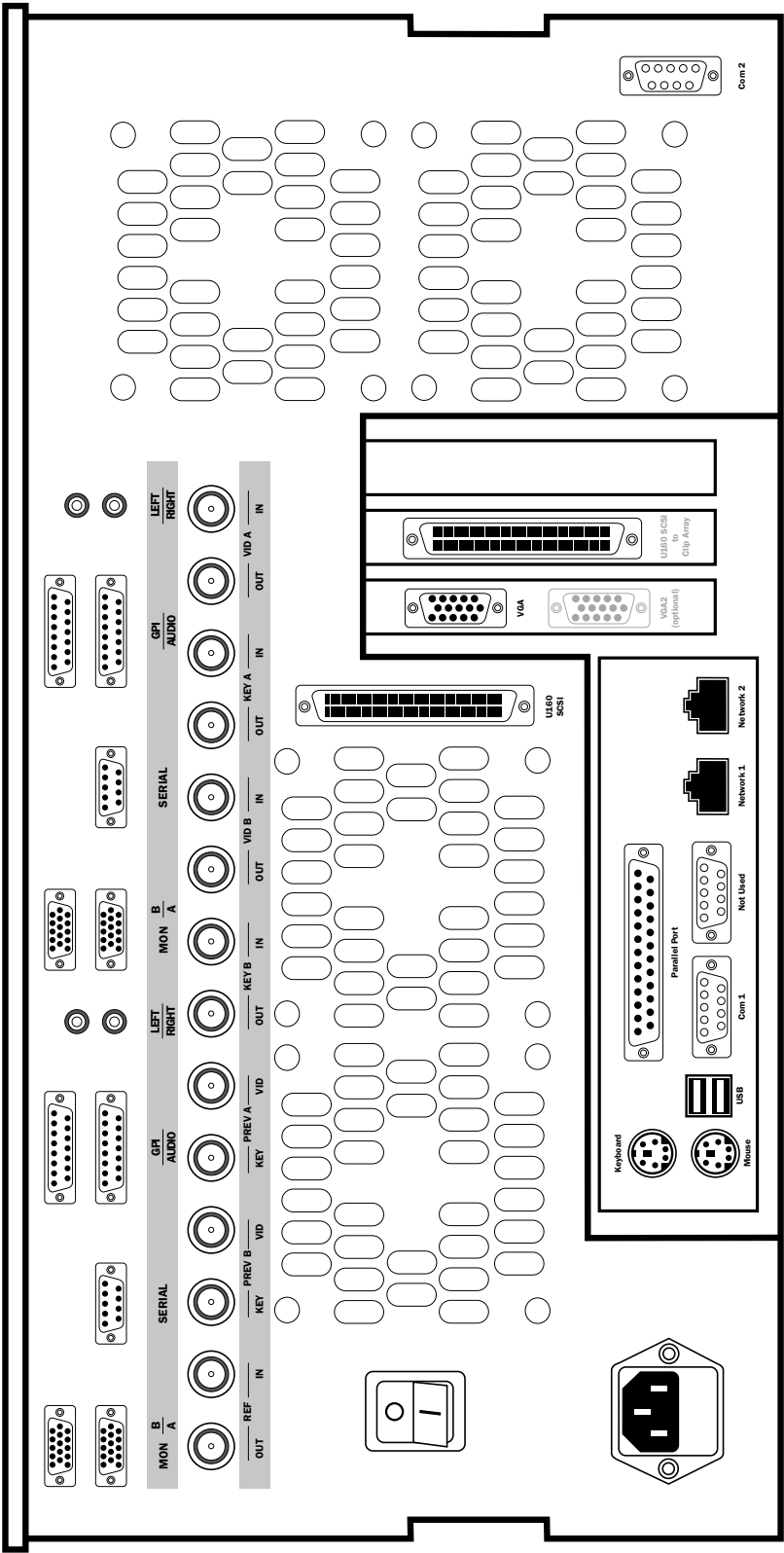
| Connector | Description |
|---|--|
| LOOP OUT | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video active loop through of the K IN signal |
| SD/HD Reference | |
| REF | 75Ω BNC digital video reference |
| LOOP OUT | 75Ω BNC digital video reference loop through |
| Peripherals, Serial, Parallel, Networking and VGA | |
| KEYBOARD | PS/2 Keyboard connector |
| MOUSE | PS/2 Mouse connector |
| USB | Universal Serial Bus 1.1 (USB) connector |
| Parallel Port | 25-pin female D-type parallel port |
| COM 1 | Serial RS232 9-pin male D-type connector |
| NETWORK 1 | Ethernet 10/100 RJ45 connector |
| NETWORK 2 | Ethernet 10/100 RJ45 connector |
| VGA | 15-pin female HD D-type VGA output |
| VGA2 | Optional second 15-pin female HD D-type VGA output |
| COM 2 | Serial RS232 9-pin male D-type connector |

4.6 Clarity 2 STYLE B rear panel layout, specification and connectors

[LEGACY]

4.6.1 Rear panel layout (dual channel)

F-38 Clarity 2 STYLE B rear panel layout (dual channel) [LEGACY]



4.6.2 Specification

The following table details specifications for the Clarity 2 STYLE B rear panel system:

T-29 Clarity 2 STYLE B specification [LEGACY]

| | | |
|---|---|---------|
| Physical | | 4.6.2.1 |
| Height (mm) | 220 | |
| Width (mm) | 437 | |
| Depth (mm) | 614 | |
| Weight | 21Kg | |
| Power | | 4.6.2.2 |
| Requirements | 100-240V 50/60Hz | |
| Connector | IEC 3-pin | |
| Current and Consumption | 4/2A 350W | |
| Fuse | T3.15A 240V T6.3A 110V | |
| Environmental | | 4.6.2.3 |
| Operating temperature range | +5 to +35 °C | |
| Operating humidity range | 20 to 80 % (non condensing) | |
| Storage/Memory | | 4.6.2.4 |
| System Hard Disk | 36 Gb minimum | |
| System RAM | 1Gb DDR system memory expandable to 2Gb | |
| Removable | 1.44 Mb PC compatible floppy disk 250 Mb internal Iomega ZIP drive CD/CD-R/CD-RW/DVD-RW drive | |
| Video (menu selectable, dependant on hardware derivative) | | 4.6.2.5 |
| SD | 525/60 or 625/50 | |

| | |
|---|---|
| HD | 1080i, 1080p/af or 720p @ 60/59.94/50/24/25 Hz |
| Aspect Ratio (SD) | 4:3, 14:9, 16:9 or user defined |
| SD Outputs (per channel) | |
| 4.6.2.6 | |
| Video Digital | REC601/656 serial digital video and key with internal 10-bit downstream keyer. Software switchable 4:2:2:4 or 4:4:4 operation. REC601/656 serial digital preview and key. |
| Analogue | Dual monitoring outputs software selectable to RGB, YUV, YC, Composite all with key and sync. |
| GPO contact closure trigger outputs | x2 via 15-pin SD D-type female socket |
| SD Inputs | |
| 4.6.2.7 | |
| Video Digital (per channel) | REC601/656 serial digital video and key input. Input frame re-synchroniser to allow non-locked sources and simplify system installations. Can also be software selected to run in minimum delay configuration. 4:2:2:4 or 4:4:4 operation with pass through of embedded audio and data. |
| Ref | Colour black or mixed syncs with loop through and internal software selectable terminator. System will free-run with no sync source present. Menu control of lock timing. |
| Bypass GPI contact closure trigger inputs (per channel) | x4 via 15-pin SD D-type female socket |
| Audio (per channel) | |
| 4.6.2.8 | |
| AES/EBU | x2 AES inputs and x2 outputs per channel via 15-pin SD D-type female socket |
| Embedded | Each channel includes de-embed/re-embed capability with ducking |
| Analogue | Each channel provides analogue audio monitoring on RCA connectors at -10 dbm |
| Interface Connections | |
| 4.6.2.9 | |
| PS/2 (keyboard, mouse) | x2 |
| SVGA 15-pin D-type female | x1 (dual available at extra cost) |
| VTR RS422/SERIAL RS232 switchable 9-pin D-type female | x2 |
| SERIAL RS232 9-pin D-type male | x2 |
| SERIAL RS232 9-pin D-type female | |
| SERIAL RS232 25-pin D-type female | |
| SCSI 68-pin HD D-type ULTRA SCSI 160 female | x2 |

| | |
|--|-----------------------|
| Ethernet (RJ45 10/100 Base Tx) | x2 |
| (OPTIONAL) Ethernet (RJ45 10/100/1000 Base Tx) (Gigabit) | x1 |
| USB | x2 (USB 1.1 or later) |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.6.3 Rear panel connectors

The following connectors are provided:

T-30 Clarity 2 STYLE B rear panel connectors [LEGACY]

| Connector | Description |
|--|--|
| Power Socket | IEC 3-pin Power Socket |
| SD Analogue Video, Serial, GPI/O, Digital and Analogue Audio | |
| MON B | 15-pin female HD D-type SD analogue monitor output |
| MON A | 15-pin female HD D-type SD analogue monitor output |
| SERIAL | 15-pin female D-type RS422 serial VTR/machine control OR RS232 port (switchable) |
| GPI | 15-pin female D-type GPI/GPO (General purpose contact closure inputs and outputs) port |
| AUDIO | 15-pin female D-type digital audio port |
| LEFT | RCA phono analogue monitor for left audio channel |
| RIGHT | RCA phono analogue monitor for right audio channel |
| SCSI | |
| U160 SCSI | 68-pin female HD D-type ULTRA SCSI 160 connector for external SCSI devices |
| U160 SCSI to Clip Array | Optional 68-pin female HD D-type ULTRA SCSI 160 connector for connection of external clip storage device |
| Reference | |
| OUT | 75Ω BNC Analogue reference input |
| IN | 75Ω BNC Loop through of analogue reference. Internal termination software controlled |
| PREV B | |
| KEY | 75Ω BNC REC601/656 SD digital video preview output |
| VID | 75Ω BNC REC601/656 SD digital video key preview output |
| PREV A | |
| KEY | 75Ω BNC REC601/656 SD digital video preview output |
| VID | 75Ω BNC REC601/656 SD digital video key preview output |
| KEY B | |
| OUT | 75Ω BNC REC601/656 SD digital video key output |
| IN | 75Ω BNC REC601/656 SD digital video key input |
| VID B | |
| OUT | 75Ω BNC REC601/656 SD digital video output |
| IN | 75Ω BNC REC601/656 SD digital video input |
| KEY A | |
| OUT | 75Ω BNC REC601/656 SD digital video key output |
| IN | 75Ω BNC REC601/656 SD digital video key input |
| VID A | |
| OUT | 75Ω BNC REC601/656 SD digital video output |

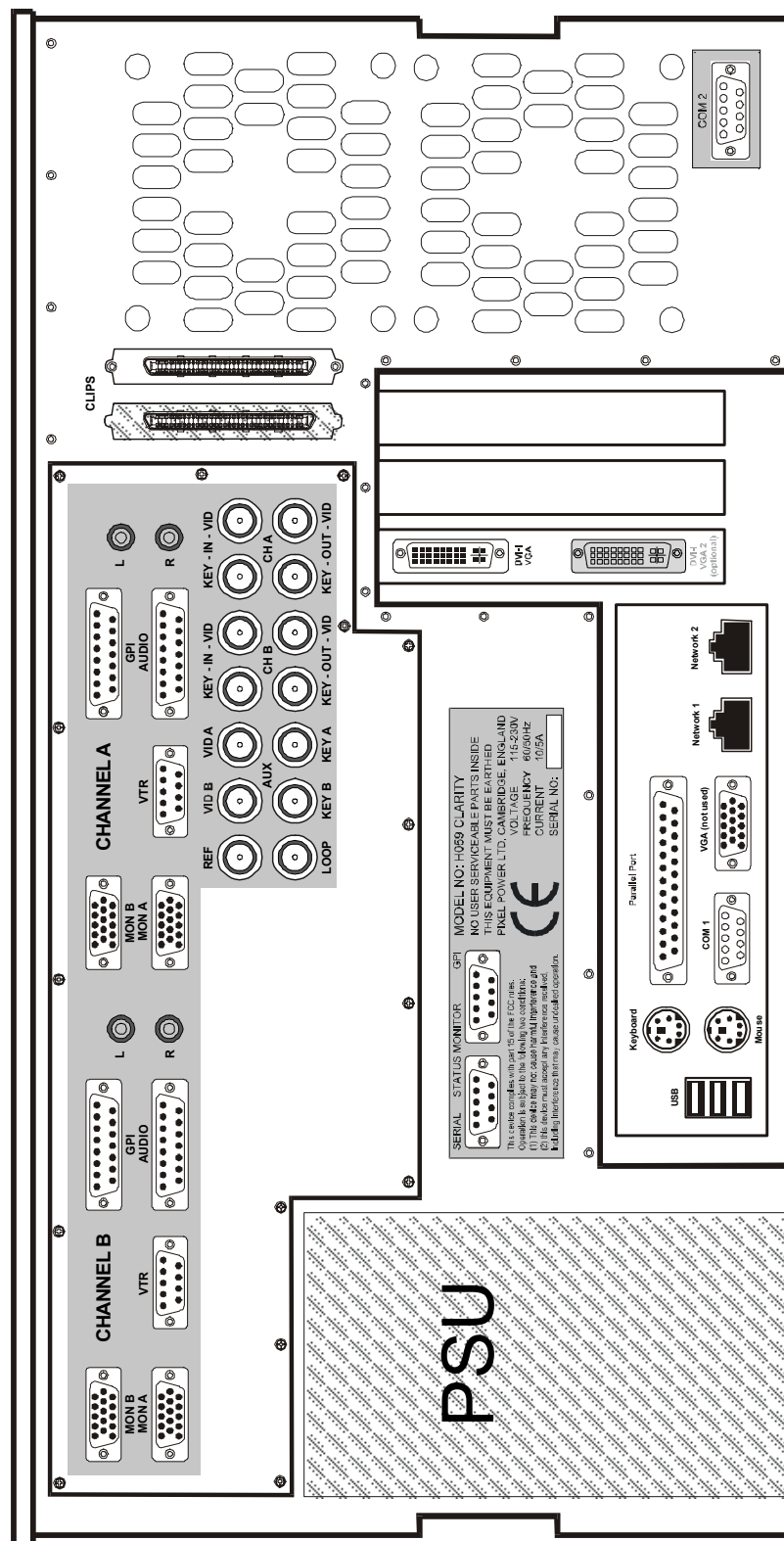
4. Rear Panels, Specification, and Connectors [CLARITY]

| Connector | Description |
|---|--|
| IN | 75 Ω BNC REC601/656 SD digital video input |
| Peripherals, Serial, Parallel, Networking and VGA | |
| KEYBOARD | PS/2 Keyboard connector |
| MOUSE | PS/2 Mouse connector |
| USB | Universal Serial Bus 2.0 (USB) connector |
| Parallel Port | 25-pin female D-type parallel port |
| COM 1, COM 2 | Serial RS232 9-pin male D-type connector |
| NETWORK 1 | Ethernet 10/100 RJ45 connector |
| NETWORK 2 | Ethernet 10/100 RJ45 connector |
| VGA | 15-pin female HD D-type VGA output |
| VGA2 | Optional second 15-pin female HD D-type VGA output |

4.7 Clarity 2 STYLE C rear panel layout, specification and connectors

4.7.1.1 Rear panel layout (dual channel)

F-39 Clarity 2 STYLE C rear panel layout [LEGACY]



4.7.2 Specification

The following table details specifications for the Clarity 2 STYLE C rear panel system:

T-31 Clarity 2 STYLE C specification [LEGACY]

| | | |
|-----------------------------|--|---------|
| Physical | | 4.7.2.1 |
| Height (mm) | 220 | |
| Width (mm) | 437 | |
| Depth (mm) | 637 | |
| Weight | Around 30Kg (final weight TBA) | |
| Power | | 4.7.2.2 |
| Requirements | 115-230V 60/50Hz with standard PSU; 100-240V 60/50Hz with dual-redundant PSU | |
| Connector | 1 x IEC 3-pin with standard PSU; 2 x IEC 3-pin with dual-redundant PSU | |
| Current and Consumption | 10/5A 350W with standard PSU; 10/6A 500W with dual-redundant PSU | |
| Fuse | Non-User replaceable | |
| Environmental | | 4.7.2.3 |
| Operating temperature range | +5 to +35 °C | |
| Operating humidity range | 20 to 80 % (non condensing) | |
| Storage/Memory | | 4.7.2.4 |
| System Hard Disk | IDE, 36 Gb minimum | |
| System RAM | 1Gb DDR system memory expandable to 2Gb | |
| Removable | 1.44 Mb PC compatible floppy disk CD/CD-R/CD-RW/DVD-RW drive | |
| Video (menu selectable) | | 4.7.2.5 |
| SD | 525/60 or 625/50 | |
| Aspect Ratio (SD) | 4:3, 14:9, 16:9 or user defined | |

SD Outputs (per channel)

4.7.2.6

| | |
|-------------------------------------|---|
| Video Digital | REC601/656 serial digital video and key with internal 10-bit downstream keyer. Software switchable 4:2:2:4 or 4:4:4 operation. REC601/656 serial digital preview and key. |
| Analogue | Dual monitoring outputs software selectable to RGB, YUV, YC, Composite all with key and sync. |
| GPO contact closure trigger outputs | x2 via 15-pin SD D-type female socket |

SD Inputs

4.7.2.7

| | |
|---|---|
| Video Digital (per channel) | REC601/656 serial digital video and key input. Input frame re-synchroniser to allow non-locked sources and simplify system installations. Can also be software selected to run in minimum delay configuration. 4:2:2:4 or 4:4:4 operation with pass through of embedded audio and data. |
| Ref | Colour black or mixed syncs with loop through and internal software selectable 75 terminator. System will free-run with no sync source present. Menu control of lock timing. |
| Bypass GPI contact closure trigger inputs (per channel) | x4 via 15-pin SD D-type female socket |

Audio (per channel)

4.7.2.8

| | |
|----------|--|
| AES/EBU | x2 AES inputs and x2 outputs per channel via 15-pin SD D-type female socket |
| Embedded | Each channel includes de-embed/re-embed capability with ducking |
| Analogue | Each channel provides analogue audio monitoring on RCA connectors at -10 dbm |

Interface Connections

4.7.2.9

| | |
|---|-----------------------------------|
| PS/2 (keyboard, mouse) | x2 |
| SVGA 24-pin DVI-I female | x1 (dual available at extra cost) |
| VTR RS422/SERIAL RS232 switchable 9-pin D-type female | x2 |
| SERIAL RS232 9-pin D-type male | x2 |
| SERIAL RS232 25-pin D-type female | |
| SCSI 68-pin HD D-type ULTRA SCSI 320 female | x2 |
| Ethernet (RJ45 10/100 Base Tx) | x1 |
| Ethernet (RJ45 10/100/1000 Base Tx) (Gigabit) | x1 |
| USB | Upto 4 (USB 1.1 or later) |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.7.3 Rear panel connectors

The following connectors are provided:

T-32 Clarity 2 STYLE C rear panel connectors [LEGACY]

| Connector/Area | Description |
|--|--|
| PSU | Refer to “5.4 Clarity 2 STYLE C and Clarity 500 STYLE A systems [LEGACY]” on page 5.12 for more information. |
| SD Analogue Video, Serial, GPI/O, Digital and Analogue Audio | |
| MON B | 15-pin female HD D-type SD analogue monitor output |
| MON A | 15-pin female HD D-type SD analogue monitor output |
| VTR | 15-pin female D-type RS422 serial VTR/machine control OR RS232 port (switchable) |
| GPI | 15-pin female D-type GPI/GPO (General purpose contact closure inputs and outputs) port |
| AUDIO | 15-pin female D-type digital audio port |
| L | RCA phono analogue monitor for left audio channel |
| R | RCA phono analogue monitor for right audio channel |
| SCSI | Only one connector will be available if your system unit features optional internal clip storage |
| CLIPS | (LEFT) 68-pin female HD D-type ULTRA SCSI 320 connector for connection of external clip storage device (blanked if your system unit features optional internal clip storage) |
| | (RIGHT) 68-pin female HD D-type ULTRA SCSI 320 connector for connection of external clip storage device |
| Reference | |
| REF | 75Ω BNC Analogue reference input |
| LOOP | 75Ω BNC Loop through of analogue reference. Internal termination software controlled. |
| AUX | AUXILIARY OUTPUTS |
| VID A | 75Ω BNC REC601/656 SD digital video preview output (Channel A) |
| KEY A | 75Ω BNC REC601/656 SD digital video key preview output (Channel A) |
| VID B | 75Ω BNC REC601/656 SD digital video preview output (Channel B) |
| KEY B | 75Ω BNC REC601/656 SD digital video key preview output (Channel B) |
| CH B | CHANNEL B VIDEO/KEY IN/OUT |
| KEY IN | 75Ω BNC REC601/656 SD digital video input |
| VID IN | 75Ω BNC REC601/656 SD digital video key input |
| VID OUT | 75Ω BNC REC601/656 SD digital video output |
| KEY OUT | 75Ω BNC REC601/656 SD digital video key output |
| CH A | CHANNEL A VIDEO/KEY IN/OUT |
| KEY IN | 75Ω BNC REC601/656 SD digital video input |
| VID IN | 75Ω BNC REC601/656 SD digital video key input |
| VID OUT | 75Ω BNC REC601/656 SD digital video output |
| KEY OUT | 75Ω BNC REC601/656 SD digital video key output |

4. Rear Panels, Specification, and Connectors [CLARITY]

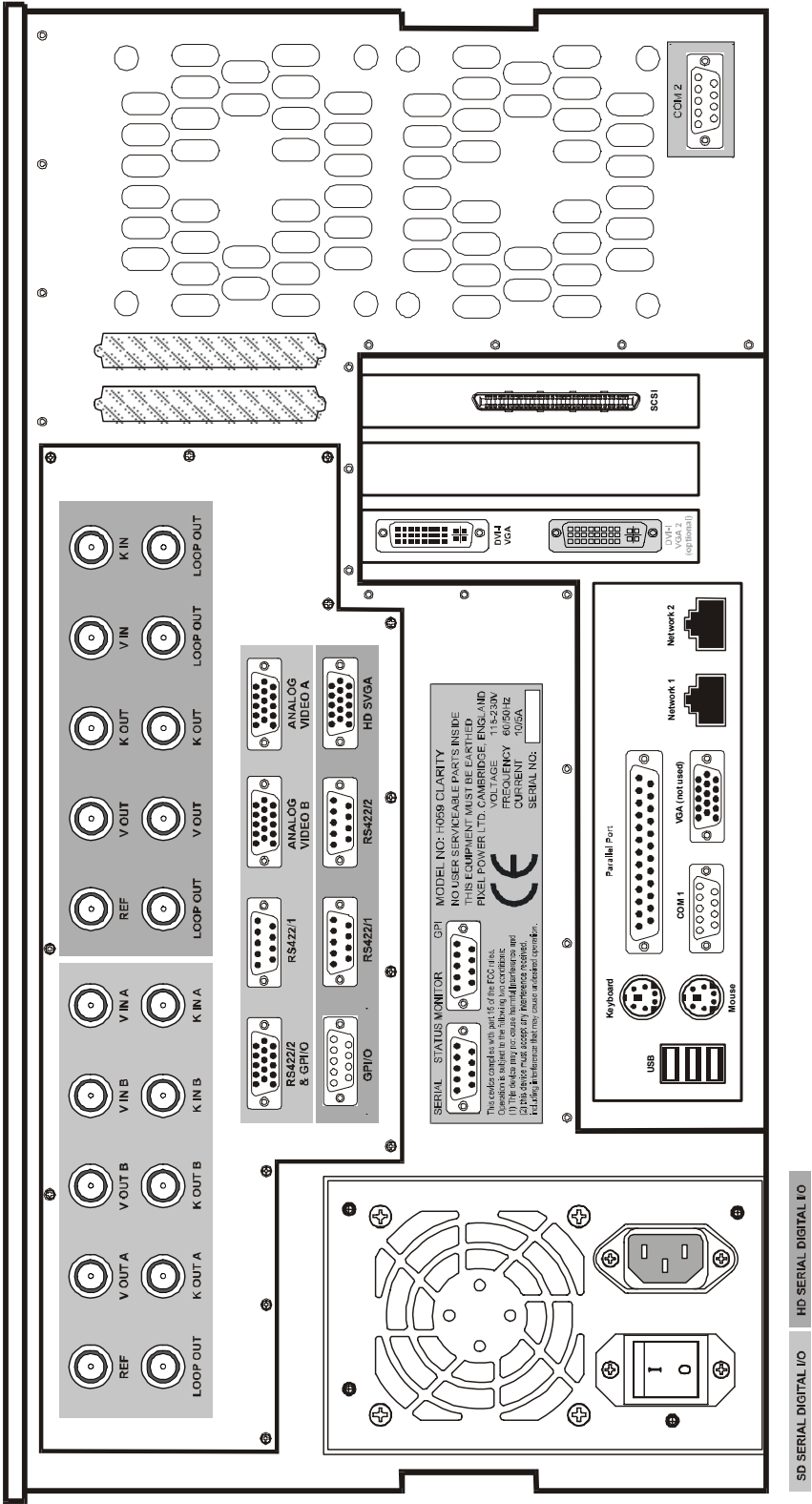
| Connector/Area | Description |
|--|---|
| Peripherals, Serial, Parallel, Networking and VGA | |
| KEYBOARD | PS/2 Keyboard connector |
| MOUSE | PS/2 Mouse connector |
| USB | Universal Serial Bus 2.0 (USB) connector |
| Parallel Port | 25-pin female D-type parallel port |
| COM 1, COM 2 | Serial RS232 9-pin male D-type connector |
| NETWORK 1 | Ethernet 10/100 RJ45 connector |
| NETWORK 2 | Ethernet 10/100 OR Ethernet 10/100/1000 GIGABIT RJ45 connector |
| DVI-I VGA | 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |
| DVI-I VGA2 | Optional second 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |
| Status Monitor | |
| SERIAL | 9-pin female D-type RS422 serial VTR/machine control OR RS232 port (switchable) |
| GPI | 9-pin female D-type connector GPI port |

4.8 Clarity 2 STYLE D rear panel layout, specification and connectors

[LEGACY]

4.8.1 Rear panel layout (dual channel)

F-40 Clarity 2 STYLE D rear panel layout (dual channel) [LEGACY]



4.8.2 Specification

The following table details specifications for the Clarity 2 STYLE D rear panel system:

T-33 Clarity 2 STYLE D specification [LEGACY]

| | | |
|---|--|---------|
| Physical | | 4.8.2.1 |
| Height (mm) | 220 | |
| Width (mm) | 437 | |
| Depth (mm) | 614 | |
| Weight | Around 30Kg (final weight TBA) | |
| Power | | 4.8.2.2 |
| Requirements | 100-240V 60/50Hz | |
| Connector | IEC 3-pin | |
| Current and Consumption | 10/6A 650W | |
| Fuse | Non-User replaceable | |
| Environmental | | 4.8.2.3 |
| Operating temperature range | +5 to +35 °C | |
| Operating humidity range | 20 to 80 % (non condensing) | |
| Storage/Memory | | 4.8.2.4 |
| System Hard Disk | SCSI | |
| System RAM | 1Gb DDR system memory expandable to 2Gb | |
| Removable | 1.44 Mb PC compatible floppy disk CD/CDR/CDRW/DVD drive | |
| Video (menu selectable, dependant on hardware derivative) | | 4.8.2.5 |
| SD | 525/60 or 625/50 | |
| HD | 1080i, 1080p/sf or 720p @ 60/59.94/50/24/25 Hz | |

| | |
|-------------------|---------------------------------|
| Aspect Ratio (SD) | 4:3, 14:9, 16:9 or user defined |
|-------------------|---------------------------------|

| | | |
|-------------------------------------|---|----------------|
| SD Outputs (per channel) | | 4.8.2.6 |
| Video Digital | REC601/656 serial digital video and key with internal 10-bit downstream keyer. Software switchable 4:2:2:4 or 4:4:4:4 operation. REC601/656 serial digital preview and key. | |
| Analogue | Dual monitoring outputs software selectable to RGB, YUV, YC, Composite all with key and sync. | |
| GPO contact closure trigger outputs | x2 via 15-pin HD D-type female socket | |

| | | |
|---|---|----------------|
| SD Inputs | | 4.8.2.7 |
| Video (per channel) | REC601/656 serial digital video and key input. Input frame re-synchroniser to allow non-locked sources and simplify system installations. Can also be software selected to run in minimum delay configuration. 4:2:2:4 or 4:4:4:4 operation with pass through of embedded audio and data. | |
| Ref | Colour black or mixed syncs with loop through and internal software selectable terminator. System will free-run with no sync source present. Menu control of lock timing. | |
| Bypass GPI contact closure trigger inputs (per channel) | x4 via 15-pin HD D-type female socket | |

| | | |
|---|--|----------------|
| HD Outputs (per channel) | | 4.8.2.8 |
| Video Digital | SMPT292M serial digital video and key with dual connectors. 10-bit downstream keyer. 4:2:2:4 or 4:4:4:4 operation. | |
| Analogue | Low cost SVGA connector for monitoring in RGBHV format in accordance with SMPT292 recommended practice. | |
| GPO contact closure trigger outputs (per channel) | x2 via 15-pin D-type male socket | |

| | | |
|---|---|----------------|
| HD Inputs | | 4.8.2.9 |
| Video (per channel) | SMPT292M serial digital and key with active loop through. | |
| Ref | Tri-level or bi-level HD sync with loop through and internal software selectable termination. | |
| Bypass GPI contact closure trigger inputs (per channel) | x2 via 15-pin D-type male socket | |

| | | |
|---|-----------------------------------|-----------------|
| Interface Connections | | 4.8.2.10 |
| PS/2 (keyboard, mouse) | x2 | |
| SVGA 24-pin DVI-I female | x1 (dual available at extra cost) | |
| VTR RS422/SERIAL RS232 switchable 9-pin D-type female | x2 | |

4. Rear Panels, Specification, and Connectors [CLARITY]

| | |
|---|---------------------------|
| SERIAL RS232 9-pin D-type male | x2 |
| SERIAL RS232 25-pin D-type female | |
| SCSI 68-pin HD D-type ULTRA SCSI 160 female | x1 |
| Ethernet (RJ45 10/100 Base Tx) | x1 |
| Ethernet (RJ45 10/100/1000 Base Tx) (Gigabit) | x1 |
| USB | Upto 4 (USB 1.1 or later) |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.8.3 Rear panel connectors

The following connectors are provided:

T-34 Clarity 2 STYLE D rear panel connectors [LEGACY]

| Connector | Description |
|--|--|
| Power Socket | Clarity 2 STYLE D systems feature a single non-redundant PSU as standard. |
| SD Serial, GPI/O and Analogue Video | |
| RS422/2 & GPI/O | 15-pin female D-type RS422 serial VTR/machine control AND GPI/GPO (General purpose contact closure inputs and outputs) port |
| RS422/1 | 9-pin female D-type RS422 serial VTR/machine control port |
| ANALOGUE VIDEO B | 15-pin female HD D-type SD analogue monitor output (Channel A) |
| ANALOGUE VIDEO A | 15-pin female HD D-type SD analogue monitor output (Channel B) |
| HD GPI/O, Serial and SVGA Digital Video | |
| GPI/O | 9-pin male D-type GPI/GPO (General purpose contact closure inputs and outputs) port |
| RS422/1 | 9-pin female D-type RS422 serial VTR/machine control port |
| RS422/2 | 9-pin female D-type RS422 serial VTR/machine control port |
| HD SVGA | 15-pin female HD D-type SVGA high density analogue monitor output |
| SCSI | |
| SCSI | 68-pin female HD D-type ULTRA SCSI 160 connector for external SCSI devices |
| Digital SD Video I/O | |
| V OUT A | 75Ω BNC REC601/656 SD digital video output (Channel A) |
| K OUT A | 75Ω BNC REC601/656 SD digital video key output (Channel A) |
| V OUT B | 75Ω BNC REC601/656 SD digital video output (Channel B) |
| K OUT B | 75Ω BNC REC601/656 SD digital video key output (Channel B) |
| V IN B | 75Ω BNC REC601/656 SD digital video input (Channel B) |
| K IN B | 75Ω BNC REC601/656 SD digital video key input (Channel B) |
| V IN A | 75Ω BNC REC601/656 SD digital video input (Channel A) |
| K IN A | 75Ω BNC REC601/656 SD digital video key input (Channel A) |
| Digital HD Video I/O | If the output sampling is configured as 4:4:4:4, K OUT and K IN also carry the additional chrominance samples |
| V OUT | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video output |
| V OUT | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video output (duplicate) |
| K OUT | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video key output |
| K OUT | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video key output (duplicate) |
| V IN | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video input |
| LOOP OUT | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video active loop through of the V IN signal |
| K IN | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video key input |
| LOOP OUT | 75Ω BNC 1.45Gb SDI SMPTE292M HD digital video active loop through of the K IN signal |

4. Rear Panels, Specification, and Connectors [CLARITY]

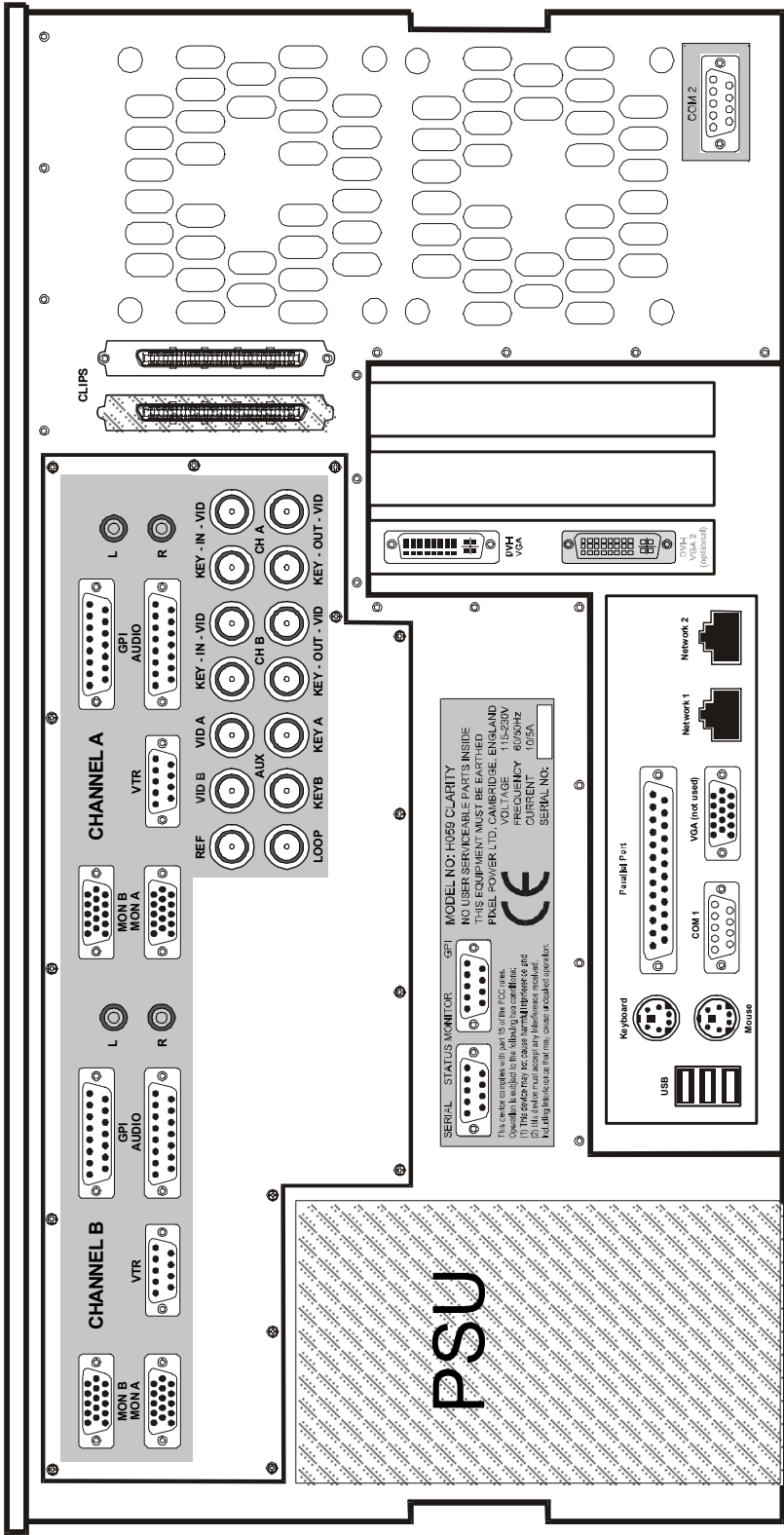
| Connector | Description |
|---|---|
| SD/HD Reference | |
| REF | 75 Ω BNC digital video reference |
| LOOP OUT | 75 Ω BNC digital video reference loop through |
| Peripherals, Serial, Parallel, Networking and VGA | |
| KEYBOARD | PS/2 Keyboard connector |
| MOUSE | PS/2 Mouse connector |
| USB | Universal Serial Bus 2.0 (USB) connector |
| Parallel Port | 25-pin female D-type parallel port |
| COM 1, COM 2 | Serial RS232 9-pin male D-type connector |
| NETWORK 1 | Ethernet 10/100 RJ45 connector |
| NETWORK 2 | Ethernet 10/100 OR Ethernet 10/100/1000 GIGABIT RJ45 connector |
| DVI-I VGA | 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |
| DVI-I VGA2 | Optional second 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |
| Status Monitor | |
| SERIAL | 9-pin female D-type RS422 serial VTR/machine control OR RS232 port (switchable) |
| GPI | 9-pin female D-type connector GPI port |

4.9 Clarity 500 STYLE A rear panel layout, specification and connectors

[LEGACY]

4.9.1 Rear panel layout (dual channel)

F-41 Clarity 500 STYLE A rear panel layout (dual channel) [LEGACY]



4.9.2 Specification

The following table details specifications for the Clarity 500 (STYLE A) rear panel system:

T-35 Clarity 500 STYLE A specification [LEGACY]

| | | |
|-----------------------------|--|---------|
| Physical | | 4.9.2.1 |
| Height (mm) | 220 | |
| Width (mm) | 437 | |
| Depth (mm) | 637 | |
| Weight | Around 30Kg (final weight TBA) | |
| Power | | 4.9.2.2 |
| Requirements | 115-230V 60/50Hz with standard PSU; 100-240V 60/50Hz with dual-redundant PSU | |
| Connector | 1 x IEC 3-pin with standard PSU; 2 x IEC 3-pin with dual-redundant PSU | |
| Current and Consumption | 10/5A 350W with standard PSU; 10/6A 500W with dual-redundant PSU | |
| Fuse | Non-User replaceable | |
| Environmental | | 4.9.2.3 |
| Operating temperature range | +5 to +35 °C | |
| Operating humidity range | 20 to 80 % (non condensing) | |
| Storage/Memory | | 4.9.2.4 |
| Hard Disk | IDE | |
| RAM | 1Gb DDR system memory expandable to 2Gb | |
| Removable | 1.44 Mb PC compatible floppy disk CD/CD-R/CD-RW/DVD-RW drive | |
| Video (menu selectable) | | 4.9.2.5 |
| SD | 525/60 or 625/50 | |
| Aspect Ratio (SD) | 4:3, 14:9, 16:9 or user defined | |

SD Outputs (per channel)

4.9.2.6

| | |
|--|---|
| Video Digital | RCC601/656 serial digital video and key with internal 10-bit downstream keyer. Software switchable 4:2:2:4 or 4:4:4:4 operation. RCC601/656 serial digital preview and key. |
| Analogue | Dual monitoring outputs software selectable to RGB, YUV, YC, Composite all with key and sync. |
| GPO contact closure trigger outputs | x2 via 15-pin SD D-type female socket |

SD Inputs

4.9.2.7

| | |
|--|--|
| Video Digital (per channel) | RCC601/656 serial digital video and key input. Input frame re-synchroniser to allow non-locked sources and simplify system installations. Can also be software selected to run in minimum delay configuration. 4:2:2:4 or 4:4:4:4 operation with pass through of embedded audio and data. |
| Ref | Colour black or mixed syncs with loop through and internal software selectable terminator. System will free-run with no sync source present. Menu control of lock timing. |
| Bypass GPI contact closure trigger inputs (per channel) | x4 via 15-pin SD D-type female socket |

Audio (per channel)

4.9.2.8

| | |
|-----------------|--|
| AES/EBU | x2 AES inputs and x2 outputs per channel via 15-pin SD D-type female socket |
| Embedded | Each channel includes de-embed/re-embed capability with ducking |
| Analogue | Each channel provides analogue audio monitoring on RCA connectors at -10 dbm |

Monitoring

4.9.2.9

| | |
|--|----|
| GPI 9-pin D-type female | x1 |
| RS422/SERIAL RS232 switchable 9-pin D-type female | x1 |

Interface Connections

4.9.2.10

| | |
|--|--|
| PS/2 (keyboard, mouse) | x2 |
| SVGA 24-pin DVI-I female | x1 (dual available at extra cost) |
| VTR RS422/SERIAL RS232 switchable 9-pin D-type female | x2 |
| SERIAL RS232 9-pin D-type male | x2 |
| SCSI 68-pin HD D-type ULTRA SCSI 320 female | x2 (only x1 if your system unit features optional internal clip storage) |

4. Rear Panels, Specification, and Connectors [CLARITY]

| | |
|---|-------------------|
| Ethernet (RJ45 10/100 Base Tx) | x1 |
| Ethernet (RJ45 10/100/1000 Base Tx) (Gigabit) | x1 |
| USB | Up to 4 (USB 2.0) |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.9.3 Rear panel connectors

The following connectors are provided:

T-36 Clarity 500 STYLE A rear panel connectors [LEGACY]

| Connector/Area | Description |
|--|--|
| PSU | Refer to “5.4 Clarity 2 STYLE C and Clarity 500 STYLE A systems [LEGACY]” on page 5.12 for more information. |
| SD Analogue Video, Serial, GPI/O, Digital and Analogue Audio | |
| MON B | 15-pin female HD D-type SD analogue monitor output |
| MON A | 15-pin female HD D-type SD analogue monitor output |
| VTR | 9-pin female D-type RS422 serial VTR/machine control OR RS232 port (switchable) |
| GPI | 15-pin female D-type GPI/GPO (General purpose contact closure inputs and outputs) port |
| AUDIO | 15-pin female D-type digital audio port |
| L | RCA phono analogue monitor for left audio channel |
| R | RCA phono analogue monitor for right audio channel |
| SCSI | Only one connector will be available if your system unit features optional internal clip storage |
| CLIPS | (LEFT) 68-pin female HD D-type ULTRA SCSI 320 connector for connection of external clip storage device (blanked if your system unit features optional internal clip storage) |
| | (RIGHT) 68-pin female HD D-type ULTRA SCSI 320 connector for connection of external clip storage device |
| Reference | |
| REF | 75Ω BNC Analogue reference input |
| LOOP | 75Ω BNC Loop through of analogue reference. Internal termination software controlled. |
| AUX | AUXILIARY OUTPUTS |
| VID A | 75Ω BNC REC601/656 SD digital video preview output (Channel A) |
| KEY A | 75Ω BNC REC601/656 SD digital video key preview output (Channel A) |
| VID B | 75Ω BNC REC601/656 SD digital video preview output (Channel B) |
| KEY B | 75Ω BNC REC601/656 SD digital video key preview output (Channel B) |
| CH B | CHANNEL B VIDEO/KEY IN/OUT |
| KEY IN | 75Ω BNC REC601/656 SD digital video input |
| VID IN | 75Ω BNC REC601/656 SD digital video key input |
| VID OUT | 75Ω BNC REC601/656 SD digital video output |
| KEY OUT | 75Ω BNC REC601/656 SD digital video key output |
| CH A | CHANNEL A VIDEO/KEY IN/OUT |
| KEY IN | 75Ω BNC REC601/656 SD digital video input |
| VID IN | 75Ω BNC REC601/656 SD digital video key input |
| VID OUT | 75Ω BNC REC601/656 SD digital video output |
| KEY OUT | 75Ω BNC REC601/656 SD digital video key output |

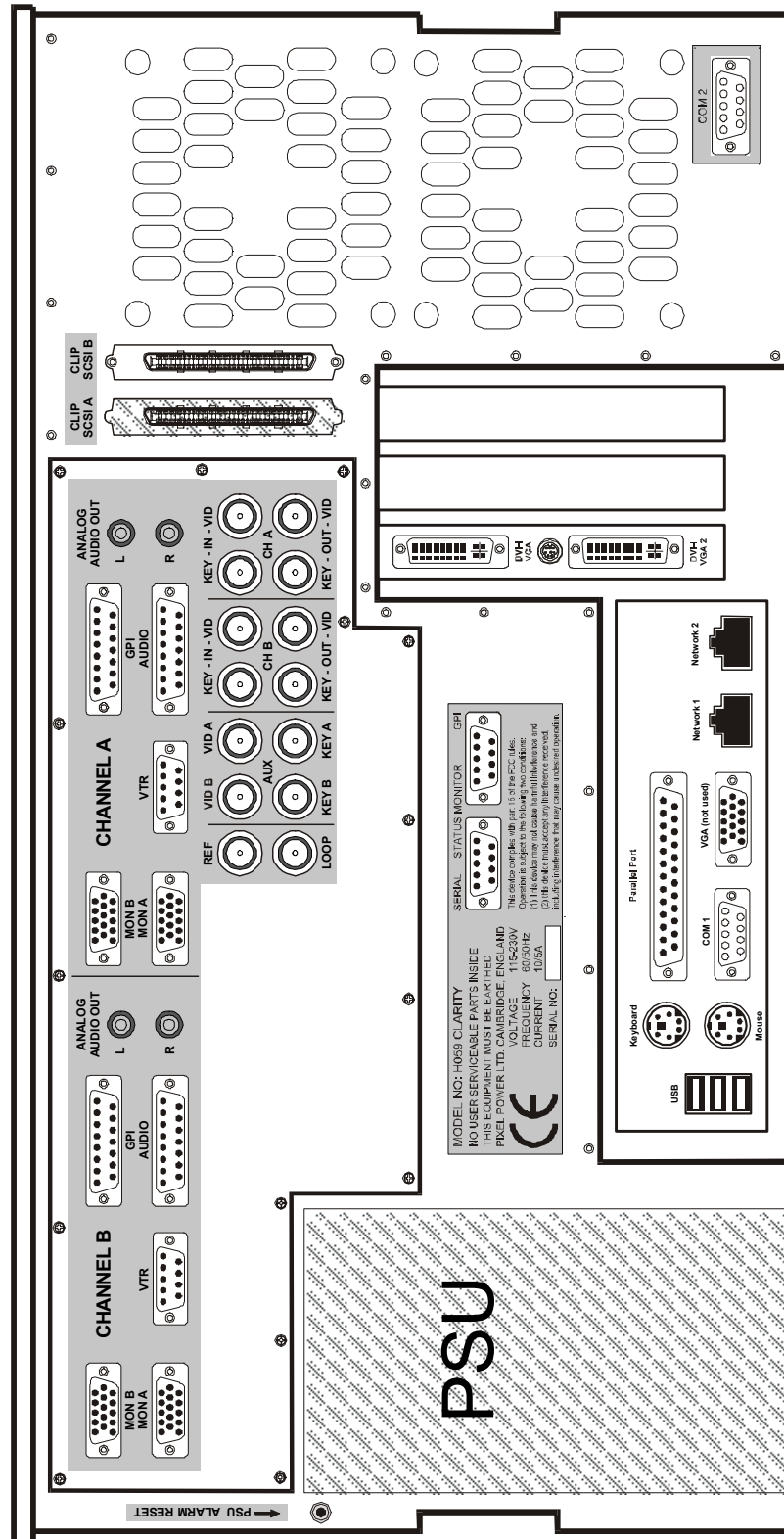
4. Rear Panels, Specification, and Connectors [CLARITY]

| Connector/Area | Description |
|--|---|
| Peripherals, Serial, Parallel, Networking and VGA | |
| KEYBOARD | PS/2 Keyboard connector |
| MOUSE | PS/2 Mouse connector |
| USB | Universal Serial Bus 2.0 (USB) connector |
| Parallel Port | 25-pin female D-type parallel port |
| COM 1, COM 2 | Serial RS232 9-pin male D-type connector |
| NETWORK 1 | Ethernet 10/100 RJ45 connector |
| NETWORK 2 | Ethernet 10/100 OR Ethernet 10/100/1000 GIGABIT RJ45 connector |
| DVI-I VGA | 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |
| DVI-I VGA2 | Optional second 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |
| Status Monitor | |
| SERIAL | 9-pin female D-type RS422 serial VTR/machine control OR RS232 port (switchable) |
| GPI | 9-pin female D-type connector GPI port |

4.10 Clarity 500 STYLE B rear panel layout, specification and connectors

4.10.1 Rear panel layout (dual channel)

F-42 Clarity 500 STYLE B rear panel layout (dual channel) [LEGACY]



4.10.2 Specification

The following table details specifications for the Clarity 500 (STYLE B) rear panel system:

T-37 Clarity 500 STYLE B specification [LEGACY]

| | | |
|-----------------------------|--|----------|
| Physical | | 4.10.2.1 |
| Height (mm) | 220 | |
| Width (mm) | 437 | |
| Depth (mm) | 637 | |
| Weight | Around 30Kg (final weight TBA) | |
| Power | | 4.10.2.2 |
| Requirements | 115-230V 60/50Hz with standard PSU; 100-240V 60/50Hz with dual-redundant PSU | |
| Connector | 1 x IEC 3-pin with standard PSU; 2 x IEC 3-pin with dual-redundant PSU | |
| Current and Consumption | 10/5A 350W with standard PSU; 9/4.5A 500W with dual-redundant PSU | |
| Fuse | Non-User replaceable | |
| Environmental | | 4.10.2.3 |
| Operating temperature range | +5 to +35 °C | |
| Operating humidity range | 20 to 80 % (non condensing) | |
| Storage/Memory | | 4.10.2.4 |
| Hard Disk | IDE | |
| RAM | 1Gb DDR system memory expandable to 2Gb | |
| Removable | 1.44 Mb PC compatible floppy disk CD/CD-R/CD-RW/DVD-RW drive | |
| Video (menu selectable) | | 4.10.2.5 |
| SD | 525/60 or 625/50 | |
| Aspect Ratio (SD) | 4:3, 14:9, 16:9 or user defined | |

SD Outputs (per channel)

4.10.2.6

| | |
|-------------------------------------|---|
| Video Digital | RCC601/656 serial digital video and key with internal 10-bit downstream keyer. Software switchable 4:2:2:4 or 4:4:4:4 operation. RCC601/656 serial digital preview and key. |
| Analogue | Dual monitoring outputs software selectable to RGB, YUV, YC, Composite all with key and sync. |
| GPO contact closure trigger outputs | x2 via 15-pin SD D-type female socket |

SD Inputs

4.10.2.7

| | |
|---|--|
| Video Digital (per channel) | RCC601/656 serial digital video and key input. Input frame re-synchroniser to allow non-locked sources and simplify system installations. Can also be software selected to run in minimum delay configuration. 4:2:2:4 or 4:4:4:4 operation with pass through of embedded audio and data. |
| Ref | Colour black or mixed syncs with loop through and internal software selectable terminator. System will free-run with no sync source present. Menu control of lock timing. |
| Bypass GPI contact closure trigger inputs (per channel) | x4 via 15-pin SD D-type female socket |

Audio (per channel)

4.10.2.8

| | |
|----------|--|
| AES/EBU | x2 AES inputs and x2 outputs per channel via 15-pin SD D-type female socket |
| Embedded | Each channel includes de-embed/re-embed capability with ducking |
| Analogue | Each channel provides analogue audio monitoring on RCA connectors at -10 dbm |

Monitoring

4.10.2.9

| | |
|---|----|
| GPI 9-pin D-type female | x1 |
| RS422/SERIAL RS232 switchable 9-pin D-type female | x1 |

Interface Connections

4.10.2.10

| | |
|---|--|
| PS/2 (keyboard, mouse) | x2 |
| SVGA 24-pin DVI-I female | x2 |
| VTR RS422/SERIAL RS232 switchable 9-pin D-type female | x2 |
| SERIAL RS232 9-pin D-type male | x2 |
| SCSI 68-pin HD D-type ULTRA SCSI 320 female | x2 (only x1 if your system unit features optional internal clip storage) |

4. Rear Panels, Specification, and Connectors [CLARITY]

| | |
|---|--|
| Ethernet (RJ45 10/100 Base Tx) | x1 |
| Ethernet (RJ45 10/100/1000 Base Tx) (Gigabit) | x1 |
| USB | Upto 5 (USB 2.0) (3 on rear panel, 2 on front panel) |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.10.3 Rear panel connectors

The following connectors are provided:

T-38 Clarity 500 STYLE B rear panel connectors [LEGACY]

| Connector/Area | Description |
|--|--|
| PSU | Refer to “5.5 Clarity 500 STYLE B systems [LEGACY]” on page 5.17 for more information. |
| SD Analogue Video, Serial, GPI/O, Digital and Analogue Audio | |
| MON B | 15-pin female HD D-type SD analogue monitor output |
| MON A | 15-pin female HD D-type SD analogue monitor output |
| VTR | 9-pin female D-type RS422 serial VTR/machine control OR RS232 port (switchable) |
| GPI | 15-pin female D-type GPI/GPO (General purpose contact closure inputs and outputs) port |
| AUDIO | 15-pin female D-type digital audio port |
| L | RCA phono analogue monitor for left audio channel |
| R | RCA phono analogue monitor for right audio channel |
| SCSI | Only one connector will be available if your system unit features optional internal clip storage |
| CLIP SCSI A | (LEFT) 68-pin female HD D-type ULTRA SCSI 320 connector for connection of external clip storage device (blanked if your system unit features optional internal clip storage) |
| CLIP SCSI B | (RIGHT) 68-pin female HD D-type ULTRA SCSI 320 connector for connection of external clip storage device |
| Reference | |
| REF | 75Ω BNC Analogue reference input |
| LOOP | 75Ω BNC Loop through of analogue reference. Internal termination software controlled. |
| AUX | AUXILIARY OUTPUTS |
| VID A | 75Ω BNC REC601/656 SD digital video preview output (Channel A) |
| KEY A | 75Ω BNC REC601/656 SD digital video key preview output (Channel A) |
| VID B | 75Ω BNC REC601/656 SD digital video preview output (Channel B) |
| KEY B | 75Ω BNC REC601/656 SD digital video key preview output (Channel B) |
| CH B | CHANNEL B VIDEO/KEY IN/OUT |
| KEY IN | 75Ω BNC REC601/656 SD digital video input |
| VID IN | 75Ω BNC REC601/656 SD digital video key input |
| VID OUT | 75Ω BNC REC601/656 SD digital video output |
| KEY OUT | 75Ω BNC REC601/656 SD digital video key output |
| CH A | CHANNEL A VIDEO/KEY IN/OUT |
| KEY IN | 75Ω BNC REC601/656 SD digital video input |
| VID IN | 75Ω BNC REC601/656 SD digital video key input |
| VID OUT | 75Ω BNC REC601/656 SD digital video output |
| KEY OUT | 75Ω BNC REC601/656 SD digital video key output |
| Peripherals, Serial, Parallel, Networking and VGA | |

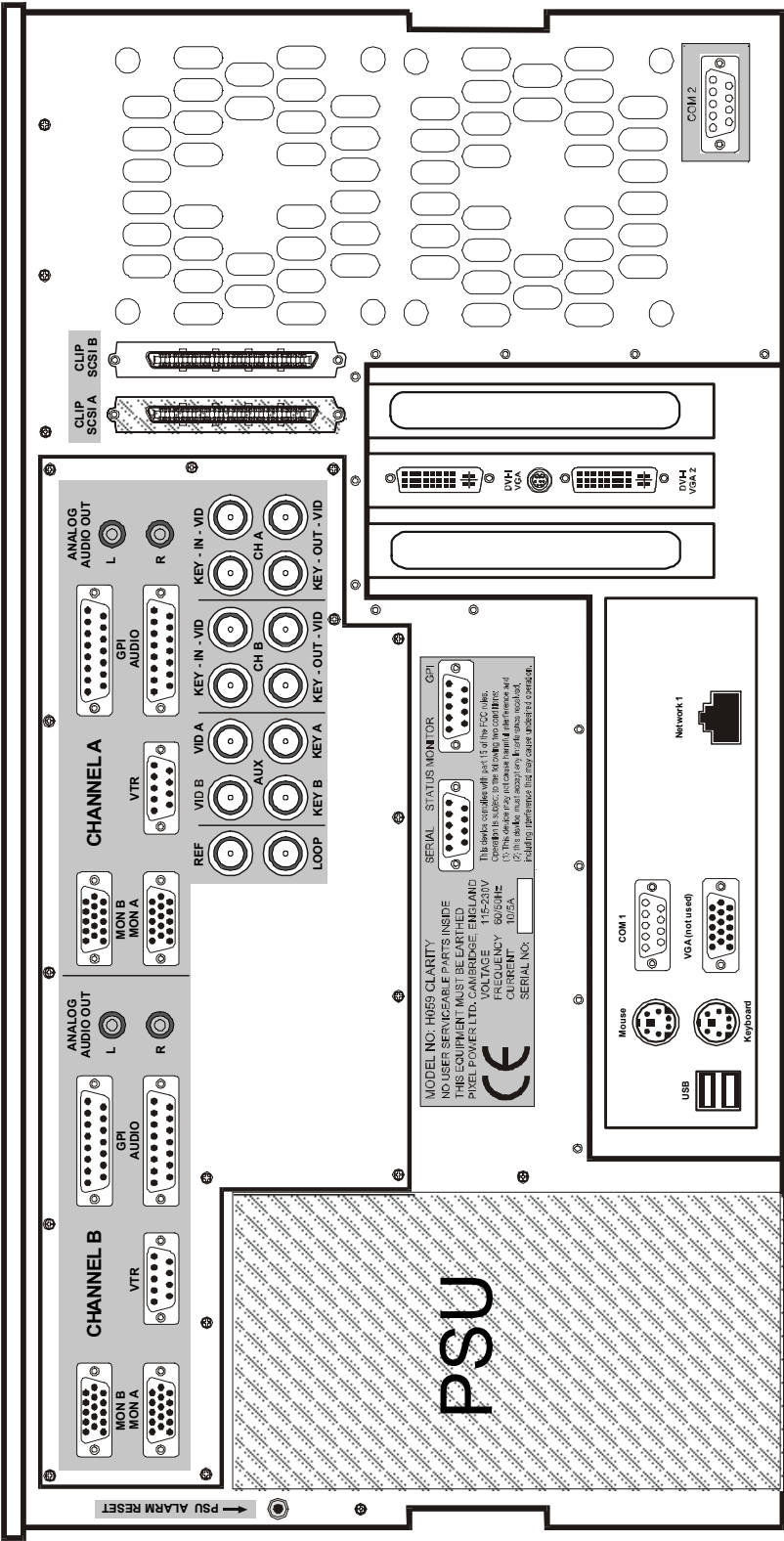
4. Rear Panels, Specification, and Connectors [CLARITY]

| Connector/Area | Description |
|----------------|--|
| KEYBOARD | PS/2 Keyboard connector |
| MOUSE | PS/2 Mouse connector |
| USB | Universal Serial Bus 2.0 (USB) connector |
| Parallel Port | 25-pin female D-type parallel port |
| COM 1, COM 2 | Serial RS232 9-pin male D-type connector |
| NETWORK 1 | Ethernet 10/100 RJ45 connector |
| NETWORK 2 | Ethernet 10/100 OR Ethernet 10/100/1000 GIGABIT RJ45 connector |
| DVI-I VGA | 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |
| DVI-I VGA2 | Second 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |
| Status Monitor | |
| SERIAL | 9-pin female D-type RS422 serial VTR/machine control OR RS232 port (switchable) |
| GPI | 9-pin female D-type connector GPI port |

4.11 Clarity 500 STYLE C rear panel layout, specification and connectors

4.11.1 Rear panel layout (dual channel)

F-43 Clarity 500 STYLE C rear panel layout (dual channel)



4.11.2 Specification

The following table details specifications for the Clarity 500 (STYLE C) rear panel system:

T-39 Clarity 500 STYLE C specification

| | | |
|-----------------------------|---|----------|
| Physical | | 4.11.2.1 |
| Height (mm) | 220 | |
| Width (mm) | 437 | |
| Depth (mm) | 637 | |
| Weight | Around 30Kg (final weight TBA) | |
| Power | | 4.11.2.2 |
| Requirements | 115-230V 60/50Hz | |
| Connector | 1 x IEC 3-pin with single PSU module; 2 x IEC 3-pin with dual PSU modules | |
| Current and Consumption | 10/5A 500W | |
| Fuse | Non-User replaceable | |
| Environmental | | 4.11.2.3 |
| Operating temperature range | +5 to +35 °C | |
| Operating humidity range | 20 to 80 % (non condensing) | |
| Storage/Memory | | 4.11.2.4 |
| Hard Disk | SATA or IDE | |
| RAM | 1Gb DDR system memory expandable to 2Gb | |
| Removable | 1.44 Mb PC compatible floppy disk CD/CD-R/CD-RW/DVD-RW +/- drive | |
| Video (menu selectable) | | 4.11.2.5 |
| SD | 525/60 or 625/50 | |
| Aspect Ratio (SD) | 4:3, 14:9, 16:9 or user defined | |

SD Outputs (per channel)

4.11.2.6

| | |
|-------------------------------------|---|
| Video Digital | RCC601/656 serial digital video and key with internal 10-bit downstream keyer. Software switchable 4:2:2:4 or 4:4:4:4 operation. RCC601/656 serial digital preview and key. |
| Analogue | Dual monitoring outputs software selectable to RGB, YUV, YC, Composite all with key and sync. |
| GPO contact closure trigger outputs | x2 via 15-pin SD D-type female socket |

SD Inputs

4.11.2.7

| | |
|---|--|
| Video Digital (per channel) | RCC601/656 serial digital video and key input. Input frame re-synchroniser to allow non-locked sources and simplify system installations. Can also be software selected to run in minimum delay configuration. 4:2:2:4 or 4:4:4:4 operation with pass through of embedded audio and data. |
| Ref | Colour black or mixed syncs with loop through and internal software selectable terminator. System will free-run with no sync source present. Menu control of lock timing. |
| Bypass GPI contact closure trigger inputs (per channel) | x4 via 15-pin SD D-type female socket |

Audio (per channel)

4.11.2.8

| | |
|----------|--|
| AES/EBU | x2 AES inputs and x2 outputs per channel via 15-pin SD D-type female socket |
| Embedded | Each channel includes de-embed/re-embed capability with ducking |
| Analogue | Each channel provides analogue audio monitoring on RCA connectors at -10 dbm |

Monitoring

4.11.2.9

| | |
|---|----|
| GPI 9-pin D-type female | x1 |
| RS422/SERIAL RS232 switchable 9-pin D-type female | x1 |

Interface Connections

4.11.2.10

| | |
|---|--|
| PS/2 (keyboard, mouse) | x2 |
| SVGA 24-pin DVI-I female | x2 |
| VTR RS422/SERIAL RS232 switchable 9-pin D-type female | x2 |
| SERIAL RS232 9-pin D-type male | x2 |
| SCSI 68-pin HD D-type ULTRA SCSI 320 female | x2 (only x1 if your system unit features optional internal clip storage) |

4. Rear Panels, Specification, and Connectors [CLARITY]

| | |
|---|--|
| Ethernet (RJ45 10/100 Base Tx) | N/A |
| Ethernet (RJ45 10/100/1000 Base Tx) (Gigabit) | x1 |
| USB | x4 (USB 2.0) (2 on rear panel, 2 on front panel) |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.11.3 Rear panel connectors

The following connectors are provided:

T-40 Clarity 500 STYLE C rear panel connectors

| Connector/Area | Description |
|--|--|
| PSU | Refer to “5.6 Clarity 500 STYLE C and Clarity 5000 STYLE A systems” on page 5.18 for more information. |
| SD Analogue Video, Serial, GPI/O, Digital and Analogue Audio | |
| MON B | 15-pin female HD D-type SD analogue monitor output |
| MON A | 15-pin female HD D-type SD analogue monitor output |
| VTR | 9-pin female D-type RS422 serial VTR/machine control OR RS232 port (switchable) |
| GPI | 15-pin female D-type GPI/GPO (General purpose contact closure inputs and outputs) port |
| AUDIO | 15-pin female D-type digital audio port |
| L | RCA phono analogue monitor for left audio channel |
| R | RCA phono analogue monitor for right audio channel |
| SCSI | Only one connector will be available if your system unit features optional internal clip storage |
| CLIP SCSI A | (LEFT) 68-pin female HD D-type ULTRA SCSI 320 connector for connection of external clip storage device (blanked if your system unit features optional internal clip storage) |
| CLIP SCSI B | (RIGHT) 68-pin female HD D-type ULTRA SCSI 320 connector for connection of external clip storage device |
| Reference | |
| REF | 75Ω BNC Analogue reference input |
| LOOP | 75Ω BNC Loop through of analogue reference. Internal termination software controlled. |
| AUX | AUXILIARY OUTPUTS |
| VID A | 75Ω BNC REC601/656 SD digital video preview output (Channel A) |
| KEY A | 75Ω BNC REC601/656 SD digital video key preview output (Channel A) |
| VID B | 75Ω BNC REC601/656 SD digital video preview output (Channel B) |
| KEY B | 75Ω BNC REC601/656 SD digital video key preview output (Channel B) |
| CH B | CHANNEL B VIDEO/KEY IN/OUT |
| KEY IN | 75Ω BNC REC601/656 SD digital video input |
| VID IN | 75Ω BNC REC601/656 SD digital video key input |
| VID OUT | 75Ω BNC REC601/656 SD digital video output |
| KEY OUT | 75Ω BNC REC601/656 SD digital video key output |
| CH A | CHANNEL A VIDEO/KEY IN/OUT |
| KEY IN | 75Ω BNC REC601/656 SD digital video input |
| VID IN | 75Ω BNC REC601/656 SD digital video key input |
| VID OUT | 75Ω BNC REC601/656 SD digital video output |
| KEY OUT | 75Ω BNC REC601/656 SD digital video key output |
| Peripherals, Serial, Net-working and VGA | |

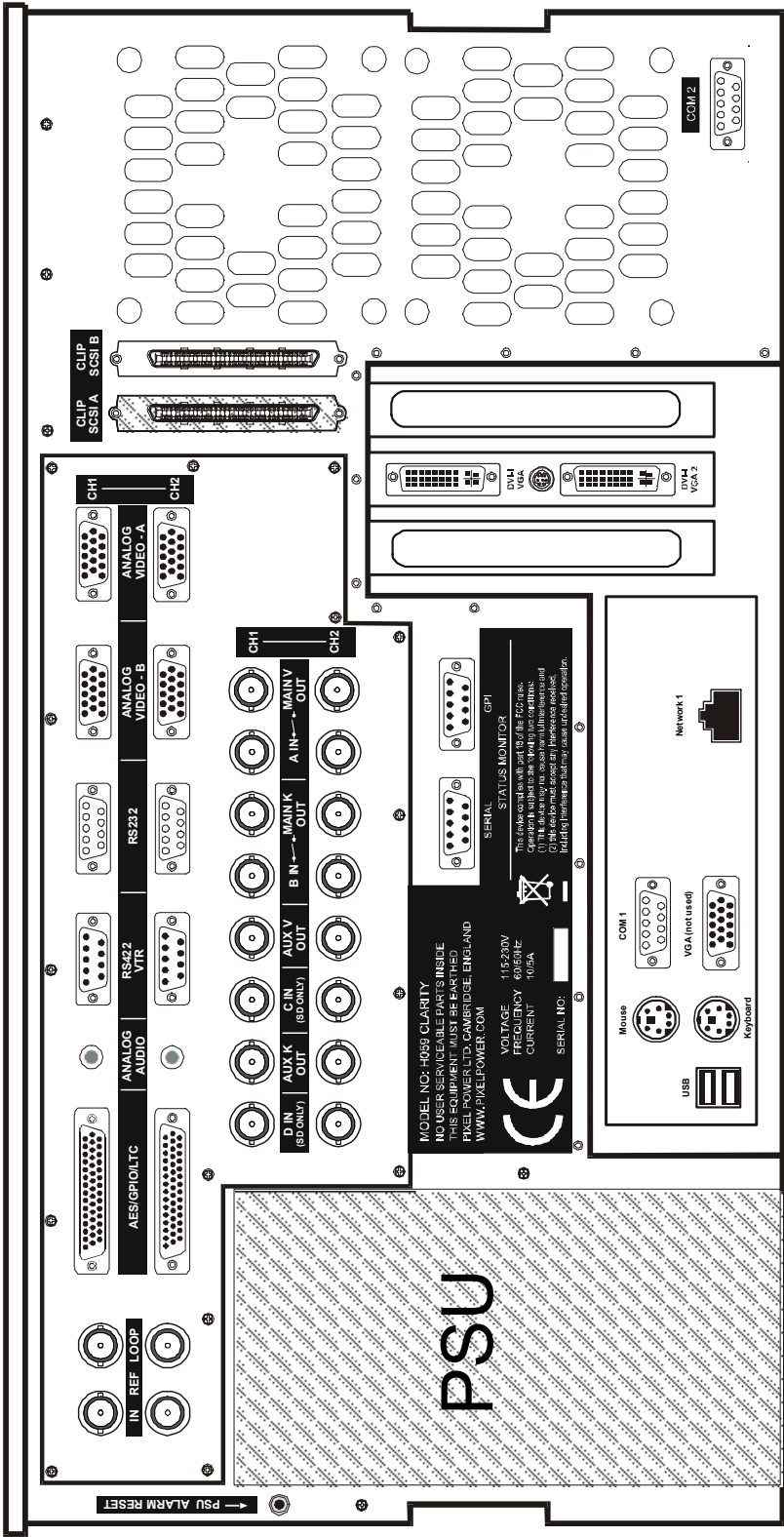
4. Rear Panels, Specification, and Connectors [CLARITY]

| Connector/Area | Description |
|----------------|--|
| KEYBOARD | PS/2 Keyboard connector |
| MOUSE | PS/2 Mouse connector |
| USB | Universal Serial Bus 2.0 (USB) connector |
| COM 1, COM 2 | Serial RS232 9-pin male D-type connector |
| NETWORK 1 | Ethernet 10/100/1000 GIGABIT RJ45 connector |
| DVI-I VGA | 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |
| DVI-I VGA2 | Second 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |
| Status Monitor | |
| SERIAL | 9-pin female D-type RS422 serial VTR/machine control OR RS232 port (switchable) |
| GPI | 9-pin female D-type connector GPI port |

4.12 Clarity 5000 STYLE A rear panel layout, specification and connectors

4.12.1 Rear panel layout (dual channel)

F-44 Clarity 5000 STYLE A rear panel layout (dual channel)



4.12.2 Specification

The following table details specifications for the Clarity 5000 (STYLE A) rear panel system:

T-41 Clarity 5000 STYLE A specification

| | | |
|-----------------------------|---|-----------------------------------|
| Physical | | 4.12.2.1 |
| Height (mm) | 220 | |
| Width (mm) | 437 | |
| Depth (mm) | 637 | |
| Weight | Around 30Kg (final weight TBA) | |
| Power | | 4.12.2.2 |
| Requirements | 115-230V 60/50Hz | |
| Connector | 1 x IEC 3-pin with single PSU module; 2 x IEC 3-pin with dual PSU modules | |
| Current and Consumption | 10/5A 500W | |
| Fuse | Non-User replaceable | |
| Environmental | | 4.12.2.3 |
| Operating temperature range | +5 to +35 °C | |
| Operating humidity range | 20 to 80 % (non condensing) | |
| Storage/Memory | | 4.12.2.4 |
| Hard Disk | SATA or IDE | |
| RAM | 1Gb DDR system memory expandable to 2Gb | |
| Removable | 1.44 Mb PC compatible floppy disk CD/CD-R/CD-RW/DVD-RW +/- drive | |
| Video (menu selectable) | | 4.12.2.5 |
| SD | 525/60I 625/50I | 525 line (NTSC) 625 line (PAL) |

4. Rear Panels, Specification, and Connectors [CLARITY]

| | | |
|--------------|--|---|
| HD | 720/60P 720/59.94P 720/50P 720/30P 720/29.97P 720/25P 720/24P 720/23.98P 1080/60I 1080/59.94I 1080/50I 1080/30P 1080/29.97P 1080/25P 1080/24P 1080/23.98P 1080/30Psf 1080/29.97Psf 1080/25Psf 1080/24Psf 1080/23.98Psf | 720 line, 60 frames per second, progressive scan 720 line, 59.94 frames per second, progressive scan 720 line, 50 frames per second, progressive scan 720 line, 30 frames per second, progressive scan 720 line, 29.97 frames per second, progressive scan 720 line, 25 frames per second, progressive scan 720 line, 24 frames per second, progressive scan 1080 line, 60 fields per second, progressive scan 1080 line, 59.94 fields per second, interlaced 1080 line, 50 fields per second, interlaced 1080 line, 30 frames per second, progressive scan 1080 line, 29.97 frames per second, progressive scan 1080 line, 25 frames per second, progressive scan 1080 line, 24 frames per second, progressive scan 1080 line, 23.98 frames per second, progressive scan 1080 line, 30 frames per second, progressive scan, segmented frame 1080 line, 29.97 frames per second, progressive scan, segmented frame 1080 line, 25 frames per second, progressive scan, segmented frame 1080 line, 24 frames per second, progressive scan, segmented frame 1080 line, 23.98 frames per second, progressive scan, segmented frame |
| Aspect Ratio | 4:3, 14:9, 16:9 or user defined | |

SD/HD Outputs (per channel)

4.12.2.6

| | | |
|-------------------------------------|---|--|
| Video Digital | REC601/656 or SMPTE292M serial digital video and key with internal 10-bit downstream keyer. REC601/656 or SMPTE292M dedicated auxiliary preview output and key. Optionally configurable as additional program channels with basic text and stills capability. Software switchable 4:2:2:4 or 4:4:4:4 operation. | |
| Analogue | Monitoring output (s) software selectable to RGB, YUV, YC (SD only) . Composite all with key and sync (SD only) . | |
| GPO contact closure trigger outputs | x2 via 44-pin HD D-type female socket | |

SD/HD Inputs (per channel)

4.12.2.7

| | | |
|--|---------|--|
| Video Digital (user definable input configuration) | SD mode | Each channel provides a total of four REC601/656 serial digital video inputs, configurable as two video + key pairs or four discrete inputs. Each input features 2D DVE capability and automatic relay bypass. 4:2:2:4 or 4:4:4:4 operation with pass through of embedded audio and data. Input frame re-synchroniser to allow non-locked sources and simplify system installations. |
| | HD mode | Each channel has two SMPTE292M serial digital video inputs that may be used as video + key or video 1 + video 2. Each input features 2D DVE capability and automatic relay bypass. Input frame re-synchroniser to allow non-locked sources and simplify system installations. |
| Ref | SD mode | Colour black or mixed syncs with loop through and internal software selectable terminator. System will free-run with no sync source present. Menu control of lock timing. |

| | | |
|---|--|---|
| | HD mode | Tri-level or bi-level HD sync with loop through and internal software selectable termination. |
| Bypass GPI contact closure trigger inputs (per channel) | x4 via 44-pin HD D-type female socket | |
| Audio (per channel) | | |
| 4.12.2.8 | | |
| AES/EBU | x2 AES inputs and x2 outputs (4 stereo pairs) with relay bypass per channel via 44-pin HD D-type female socket | |
| Embedded | Each channel includes de-embed/re-embed capability with ducking. Embedded audio can be extracted from all digital inputs, mixed with internal clips and re-embedded on the program video output. | |
| Analogue | Each channel provides analogue audio monitoring via 3.5mm stereo jack connector. | |
| Monitoring | | |
| 4.12.2.9 | | |
| GPI 9-pin D-type female | x1 | |
| RS422/SERIAL RS232 switchable 9-pin D-type female | x1 | |
| Interface Connections | | |
| 4.12.2.10 | | |
| PS/2 (keyboard, mouse) | x2 | |
| SVGA 24-pin DVI-I female | x2 | |
| VTR RS422 9-pin D-type female | x2 | |
| SERIAL RS232 9-pin D-type male | x4 | |
| SCSI 68-pin HD D-type ULTRA SCSI 320 female | x2 (only x1 if your system unit features optional internal clip storage) | |
| Ethernet (RJ45 10/100 Base Tx) | N/A | |
| Ethernet (RJ45 10/100/1000 Base Tx) (Gigabit) | x1 | |
| USB | x4 (USB 2.0) (2 on rear panel, 2 on front panel) | |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.12.3 Rear panel connectors

The following connectors are provided:

T-42 Clarity 5000 STYLE A rear panel connectors

| Connector/Area | Description |
|---|--|
| PSU | Refer to “5.6 Clarity 500 STYLE C and Clarity 5000 STYLE A systems” on page 5.18 for more information. |
| HD/SD Analogue Video, Serial, GPI/O, Digital and Analogue Audio | Per channel |
| ANALOG VIDEO A | 15-pin female HD D-type SD/HD analogue monitor output |
| ANALOG VIDEO B | 15-pin female HD D-type SD/HD analogue monitor output |
| RS422 VTR | 9-pin female D-type RS422 serial VTR/machine control |
| RS232 | 9-pin male D-type serial RS232 input/output |
| AES/GPIO/LTC | 44-pin female HD D-type enabling the following: a) GPI/GPO (General purpose contact closure input and output); b) Digital audio in/out; c) Bypass/watchdog tally; d) Longitudinal Timecode (LTC) in/out. For more information on creating the relevant cable to use with this connector, refer to “6.1.4.17 Clarity 5000 44-pin breakout communication cable data” on page 6.46 for more information. |
| ANALOG AUDIO | 3.5mm stereo jack socket for analogue monitoring |
| SCSI | Only one connector will be available if your system unit features optional internal clip storage |
| CLIP SCSI A | (LEFT) 68-pin female HD D-type ULTRA SCSI 320 connector for connection of external clip storage device (blanked if your system unit features optional internal clip storage) |
| CLIP SCSI B | (RIGHT) 68-pin female HD D-type ULTRA SCSI 320 connector for connection of external clip storage device |
| Reference | Per channel |
| IN | 75Ω BNC Analogue reference input |
| LOOP | 75Ω BNC Loop through of analogue reference. Internal termination software controlled. |
| Digital SD/HD Auxiliary Outputs | Per channel |
| AUX V OUT | 75Ω BNC REC601/656 SD or 1.45Gb SDI SMPTE292M HD digital video preview output |
| AUX K OUT | 75Ω BNC REC601/656 SD or 1.45Gb SDI SMPTE292M HD digital video key preview output |
| Main Digital SD/HD Video I/O | Per channel |
| MAIN V OUT | 75Ω BNC REC601/656 SD or 1.45Gb SDI SMPTE292M HD digital video output |
| MAIN K OUT | 75Ω BNC REC601/656 SD or 1.45Gb SDI SMPTE292M HD digital video key output |
| Assignable Digital SD/HD Video I/O | Per channel; assignable connector operation configured using CG Tools software |
| A IN | 75Ω BNC REC601/656 SD or 1.45Gb SDI SMPTE292M HD assignable digital video/key input |
| B IN | 75Ω BNC REC601/656 SD or 1.45Gb SDI SMPTE292M HD assignable digital video/key input |
| C IN | 75Ω BNC REC601/656 SD assignable digital video/key input |
| D IN | 75Ω BNC REC601/656 SD assignable digital video/key input |
| Peripherals, Serial, Networking and VGA | |
| KEYBOARD | PS/2 Keyboard connector |

4. Rear Panels, Specification, and Connectors [CLARITY]

| Connector/Area | Description |
|-----------------------|--|
| MOUSE | PS/2 Mouse connector |
| USB | Universal Serial Bus 2.0 (USB) connector |
| COM 1, COM 2 | Serial RS232 9-pin male D-type connector |
| NETWORK 1 | Ethernet 10/100/1000 GIGABIT RJ45 connector |
| DVI-I VGA | 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |
| DVI-I VGA2 | Second 24-pin female DVI-I output (provides both ANALOGUE and DIGITAL video signals) |
| Status Monitor | |
| SERIAL | 9-pin female D-type RS422 serial VTR/machine control OR RS232 port (switchable) |
| GPI | 9-pin female D-type connector GPI port |

4.13 Connector descriptions

Rear panel connectors featured on all Clarity system unit derivatives are listed below. To identify connector descriptions that are relevant to the labels represented by the rear panel illustrations in this section, refer to the table at the top of each section.

4.13.1 Power

4.13.1.1 Standard single PSU

| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|-----------------|-----------------|
| POWER | | | POWER |

System units feature an IEC 3-pin power socket for connection using the supplied moulded mains lead to the mains power supply (100-230V~60/50Hz). Refer to “[5. Clarity Power Supply Units \(PSU\) \[CLARITY\]](#)” on page 5.1 for more information.

4.13.1.2 Optional dual-redundant PSU cage

| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|-----------------|-----------------|
| | PSU | PSU | PSU |

System units may optionally feature a dual-redundant power supply featuring two IEC 3-pin power sockets, one for each redundant module. Refer to “[5. Clarity Power Supply Units \(PSU\) \[CLARITY\]](#)” on page 5.1 for more information.

4.13.2 Peripherals, Networking, USB, VGA and DVI-I

4.13.2.1 PS/2 Keyboard and Mouse

| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|-------------------|-------------------|
| MOUSE/KEYBOARD | MOUSE/KEYBOARD | MOUSE KEYBOARD | MOUSE KEYBOARD |

On 5U and 3U systems, the 6-pin mini-DIN PS/2 keyboard and mouse connectors enable the connection of either a Pixel Power RapidAction or standard PC derived PS/2 keyboard and mouse to the system unit.

On 1U and 2U systems, the single 6-pin mini-DIN PS/2 connector enables the connection of a Pixel Power RapidAction or standard PC derived PS/2 keyboard and mouse to the system unit. Both of these peripherals are connected to the single PS/2 DIN socket using a breakout cable supplied with the system.



4.13.2.1.1 PS/2 extension cables

A PS/2 mouse or keyboard can be extended using a PS/2 extension cable. The maximum length of the cable will be dependent on electrical noise around the route of the cable, but in most cases should allow extensions of between 10 and 20 metres. Clarity End - 6-pin mini-DIN PS/2 male, Keyboard/Mouse End - 6-pin mini-DIN PS/2 female.

4.13.2.2 Networking

| 1U system label | 2U system label | 3U system label | 5U system label |
|----------------------|------------------------|-----------------|------------------------|
| NETWORK NETWORK 2 | NETWORK 1 NETWORK 2 | NETWORK 1 | NETWORK 1 NETWORK 2 |

4. Rear Panels, Specification, and Connectors [CLARITY]

System units feature a 10/100 base T or 10/100/1000 base T (Gigabit) Ethernet RJ45 interface for connection to an Ethernet network via one or two RJ45 sockets.

4.13.2.3 USB

| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|-----------------|-----------------|
| USB | USB | USB | USB |

System units may feature up to five female USB 2.0 ports for the connection of USB enabled devices.

4.13.2.4 VGA [LEGACY]

| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|-----------------|-----------------|
| VGA | VGA | | VGA VGA2 |

System units may feature a single or dual 15-pin high density female D-type connector ports for the direct connection of VGA capable or better displays.

4.13.2.5 DVI-I

| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|--------------------------|--------------------------|
| | | DVI-I VGA DVI-I VGA 2 | DVI-I VGA DVI-I VGA 2 |

System units may feature a single DVI-I port OR dual DVI-I ports for the direct connection of digital LCD displays or analogue LCD/CRT displays via the use of a DVI male to 15-pin VGA adapter.

4.13.3 SCSI

4.13.3.1 ULTRA 160 SCSI [LEGACY]

| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|-----------------|------------------------|
| | | | ULTRA SCSI 160 SCSI |

The internal system unit SCSI bus is brought out to a 68-pin female HD D-type ULTRA SCSI 160 connector for connecting peripherals (disk drives and scanners).

4.13.3.2 ULTRA 160 SCSI [LEGACY]

| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|-----------------|--------------------------|
| | | | ULTRA SCSI TO CLIP ARRAY |

A 68-pin female HD D-type ULTRA SCSI 160 connector for connecting the external clip storage hardware (Chaparral). This SCSI connector is connected directly to the H088 PCB Framestore CPU which processes the stored video and audio clips streamed from the external storage.

4.13.3.3 ULTRA 320 SCSI

| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|-----------------|-----------------|
| | | | |

4. Rear Panels, Specification, and Connectors [CLARITY]

| | SCSI (OPT. EXT. CLIP STORAGE) | SCSI (OPT. EXT. CLIP STORAGE) | CLIPS CLIP SCSI A CLIP SCSI B |
|--|-------------------------------|-------------------------------|-------------------------------------|
|--|-------------------------------|-------------------------------|-------------------------------------|

If your system unit features the optional video/audio clip option, single or dual ULTRA SCSI 320 connectors are available for the connection of external clip stores (Chaparral).

In 2U and 3U systems:

- (Clarity 200 and 300) the single 68-pin female VHDCI ULTRA SCSI 320 connector is connected directly to the H098 PCB Clip Processing and I/O PCB which processes the stored video and audio data streamed from the external storage. Refer to [“20.22 H098 Standard Definition \(SD\) Clip Processing and Input/Output \(I/O\)”](#) on page 20.36 for more information.
- (Clarity 3000) the single 68-pin female VHDCI ULTRA SCSI 320 connector is connected directly to the H113 Disk Interface PCB which processes the stored video and audio data streamed from the external storage. Refer to [“20.32 H113 Disk Interface”](#) on page 20.46 for more information.

In 5U systems:

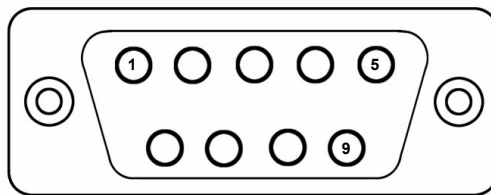
- (Clarity 500) these 68-pin female HD D-type ULTRA SCSI 320 connectors are connected directly to the H088 Framestore CPU PCB which processes the stored video and audio data streamed from the external storage. Refer to [“20.13 H088 Standard Definition \(SD\) Framestore CPU”](#) on page 20.27 for more information.
- (Clarity 5000 systems) these 68-pin female HD D-type ULTRA SCSI 320 connectors are connected directly to the H101 Disk Interface PCB which processes the stored video and audio data streamed from the external storage. Refer to [“20.24 H101 Disk Interface”](#) on page 20.38 for more information.

If your 5U system unit features the optional internal clip storage, then only the right-hand 68-pin female HD D-type connector will be available for connection to external clip storage; the left-hand socket will be blanked as this SCSI ULTRA 320 bus is used by the internal clip store.

4. Rear Panels, Specification, and Connectors [CLARITY]

4.13.4 Standard Density (SD) D-type

4.13.4.1 9-pin standard density (SD) D-type male connector (RS232)



| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|-----------------|-----------------------|
| SERIAL 1 | SERIAL 1 | SERIAL 1 | COM1 COM2 RS232 |

The RS232 connector is a 9-pin D-type male with the following pinout:

| Pin | Function |
|-----|--------------------------|
| 1 | Not connected |
| 2 | Rx Data |
| 3 | Tx Data |
| 4 | RTS |
| 5 | Ground |
| 6 | Not connected |
| 7 | RTS (connected to pin 4) |
| 8 | CTS |
| 9 | Not connected |

4.13.4.1.1 Graphics Tablet

If you want to connect a graphics tablet that does not utilise a USB connection, connect the tablet to the system unit directly using the **COM 1** or **SERIAL 1** RS232 port.

A graphics tablet can be extended using the following cables. The maximum length of these cables will be dependant on electrical noise around the route of the cable, but in most cases should allow extensions of between 10 and 20 metres.

Clarity system unit end - 9-pin D-type Female, Tablet/Mouse end - 9-pin D-type male. Cable Belden 8728/UL 2899 twin pair overall screen multi-core data cable (Farnell 152-567 or equivalent).

| Clarity/Collette Pin No | Connects to | Tablet/Mouse Pin No | |
|-------------------------|-------------|---------------------|-------------------------|
| 2 | | 2 | twisted pair with pin 7 |
| 3 | | 3 | twisted pair with pin 8 |
| 5 | | 5 | using the cable screens |
| 7 | | 7 and 4 | twisted pair with pin 2 |
| 9 | | 8 | twisted pair with pin 3 |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.13.4.1.2 RS232 Remote control

A Clarity system unit can be controlled from a PC via remote protocol commands over an RS232 serial link. Clarity needs to be connected to a PC using the following serial lead.

| | Clarity system unit (9-pin D-type female) | PC (9-pin D-type female) |
|-------|---|--------------------------|
| Rx/Tx | 2 | 3 |
| Rx/Tx | 3 | 2 |
| Gnd | 5 | 5 |

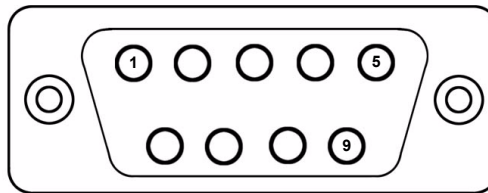
4.13.4.1.3 Newsroom interface

The newsroom system should be connected to a Clarity system unit with an RS232 cable. Software handshaking is used but it may be necessary to connect handshaking lines together at the newsroom end.

| | Clarity system unit (9-pin D-type female) | Newsroom system (numbered for 9-pin D-type female, 25-pin may be required) |
|-----------|---|--|
| Rx/Tx | 2 | 3 |
| Rx/Tx | 3 | 2 |
| Gnd | 5 | 5 |
| Handshake | - | link 4,6 & 8 together |

4.13.4.2 9-pin standard density (SD) D-type male connector (GPI/GPO)

[LEGACY]

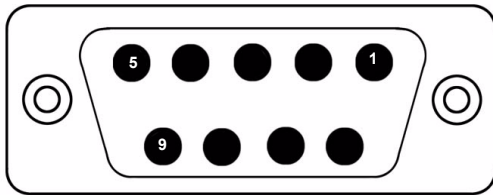


| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|-----------------|-----------------|
| | | | GPI/GPO |

| Pin | Connection |
|-----|--------------------------|
| 1 | GPO 2 positive |
| 2 | GPO 1 positive |
| 3 | GPI 1 |
| 4 | Not Connected |
| 5 | GPI 2 |
| 6 | GPO 2 negative |
| 7 | GPO 1 negative |
| 8 | +5v supply 100mA maximum |
| 9 | Ground |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.13.4.3 9-pin standard density (SD) D-type female connector (RS422)

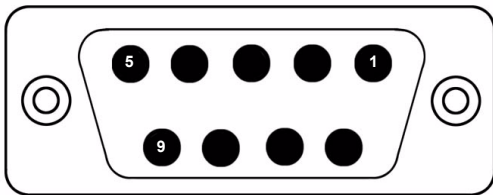


| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|-----------------|---------------------------------|
| | | | RS422/1 RS422/2 RS422 VTR |

These connectors are designed to be used with a standard 9-pin VTR RS422 control lead. If a port is being used to emulate a VTR then a crossover lead will be required.

| Pin | Connection |
|-----|---------------|
| 1 | Ground |
| 2 | RX- |
| 3 | TX+ |
| 4 | Ground |
| 5 | Not Connected |
| 6 | Ground |
| 7 | RX+ |
| 8 | TX- |
| 9 | Ground |

4.13.4.4 9-pin standard density (SD) D-type female connector (RS232/RS422/Status Monitor)



| 1U system label | 2U system label | 3U system label (Optional) | 5U system label |
|-----------------|-----------------|----------------------------|-----------------|
| | | SERIAL | SERIAL VTR |

4. Rear Panels, Specification, and Connectors [CLARITY]

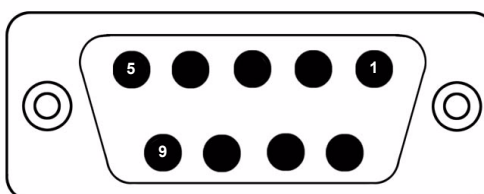
This connector can be used either as an RS422 port or as an RS232 serial port.

| Pin | RS422 Connections Sony 9-pin VTR compatible pinout Jumper selectable H087 Rear Panel (J4-J12 1-2 position) H097 Serial/GPI/GPO Status Monitor PCB (1-2 position) | RS232 Connection PC serial port compatible pinout Jumper selectable H087 Rear Panel PCB (J4-J12 2-3 position) H097 Serial/GPI/GPO Status Monitor PCB (2-3 position) |
|-----|--|---|
| 1 | Ground | Not connected |
| 2 | RX- (In) | Rx Data (In) |
| 3 | TX+ (Out) | Tx Data (Out) |
| 4 | Ground | RTS (Out) |
| 5 | Not Connected | Ground |
| 6 | Ground | Not connected |
| 7 | RX+ (In) | RTS (Out) (Connected to Pin 4) |
| 8 | TX- (Out) | CTS (In) |
| 9 | Ground | Not connected |

Refer to “21.9 Clarity 2 STYLE B and C and Clarity 500 STYLE A, B and C maintenance and upgrades” on page 21.30 for more information.

4.13.4.5 9-pin standard density (SD) D-type female connector (GPI Status Monitor)

No alarm condition is experienced when pin 2 is connected to pin 3. Alarm condition is experienced when pin 2 is connected to pin 1. Connector shell is connected to chassis.



| 1U system label | 2U system label | 3U system label (Optional) | 5U system label |
|-----------------|-----------------|----------------------------|-----------------|
| | | GPI | GPI |

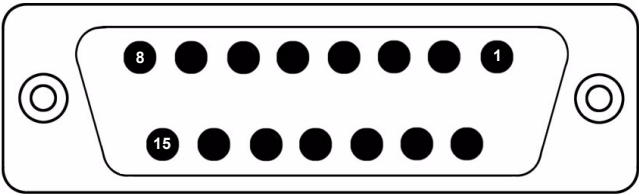
| Pin | Connection |
|-----|--|
| 1 | Alarm change over contact (normally open for no alarm) |
| 2 | Alarm change over contact common |
| 3 | Alarm change over contact (normally closed for no alarm) |
| 4 | +5v supply output 250mA max, fused at 1A, common with pin 5 |
| 5 | +5v supply output 250mA max, fused at 1A, common with pin 4 |
| 6 | Alarm cancel input (connect to ground momentarily to cancel alarm) |
| 7 | Ground |

4. Rear Panels, Specification, and Connectors [CLARITY]

| Pin | Connection |
|-----|------------|
| 8 | Ground |
| 9 | Ground |

4.13.4.6 15-pin standard density (SD) D-type female connector (GPI)

GPIs are external contact closures to ground to trigger, GPOs are undedicated make relay contacts. Tally is undedicated change over relay.



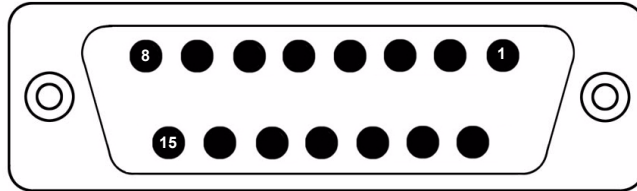
| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|-----------------|-----------------|
| | | | GPI |

| Pin | Connection |
|-----|--|
| | GPO relay - up tp 30V dc, 0.5A Tally relay - up to 30V dc, 0.5A |
| 1 | GPI 1 |
| 2 | GPI 2 |
| 3 | GPI 3 |
| 4 | GPI 4 |
| 5 | GPO 1 normally open |
| 6 | GPO 2 normally open |
| 7 | Bypass tally normally closed |
| 8 | Bypass tally normally open |
| 9 | Ground |
| 10 | Ground |
| 11 | Ground |
| 12 | Ground |
| 13 | GPO 1 wiper |
| 14 | GPO 2 wiper |
| 15 | Bypass tally wiper |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.13.4.7 15-pin standard density (SD) D-type female connector (Audio)

Clarity 500 systems employ a 15-pin female D-type socket on their respective rear panels to enable digital audio and LTC signal distribution. To learn more about creating the relevant cable to use this connector, refer to [“6.1.4.16 Clarity 500 15-way breakout digital audio/LTC cable data”](#) on page 6.45 for more information.



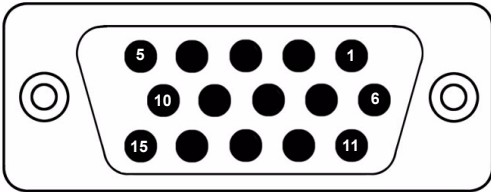
| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|-----------------|-----------------|
| | | | AUDIO |

| Pin | Connection |
|-----|---|
| 1 | AES digital audio 1-2 TX+ (from Clarity) |
| 2 | AES digital audio 1-2 TX- (from Clarity) |
| 3 | Ground |
| 4 | AES digital audio 1-2 RX+ (into Clarity) |
| 5 | AES digital audio 1-2 RX- (into Clarity) |
| 6 | Ground |
| 7 | LTC IN + (with LTC option) (into Clarity) |
| 8 | LTC IN - (with LTC option) (into Clarity) |
| 9 | Ground |
| 10 | AES digital audio 3-4 TX+ (from Clarity) |
| 11 | AES digital audio 3-4 TX- (from Clarity) |
| 12 | Ground |
| 13 | AES digital audio 3-4 RX+ (into Clarity) |
| 14 | AES digital audio 3-4 RX- (into Clarity) |
| 15 | Ground |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.13.5 High Density (HD) D-type

4.13.5.1 15-pin high density (HD) D-type female connector (HD VGA monitoring) [LEGACY]

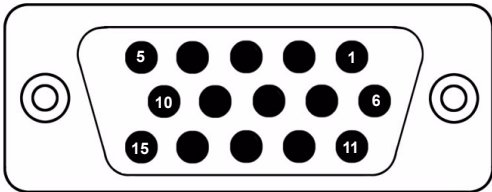


| | | | |
|-----------------|-----------------|-----------------|-----------------|
| 1U system label | 2U system label | 3U system label | 5U system label |
| | | | HD SVGA |

This connector is designed to connect to a PC style multi-sync SVGA analogue monitor that is compatible with the HD scan rates being used.

| Pin | Connection |
|-----|--------------------------|
| 1 | Red Analogue Video |
| 2 | Green Analogue Video |
| 3 | Blue Analogue Video |
| 4 | Not Connected |
| 5 | Ground |
| 6 | Red Return |
| 7 | Green Return |
| 8 | Blue Return |
| 9 | +5v supply 100mA maximum |
| 10 | Ground |
| 11 | Not Connected |
| 12 | IIC Data |
| 13 | TTL H Sync |
| 14 | TTL V Sync |
| 15 | IIC Clock |

4.13.5.2 15-pin high density (HD) D-type female connector (RS422 and GPI/O) [LEGACY]

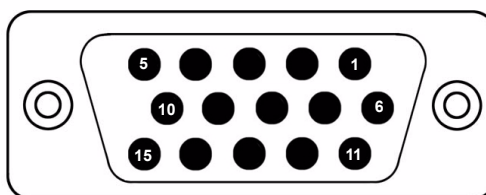


| | | | |
|-----------------|-----------------|-----------------|-----------------|
| 1U system label | 2U system label | 3U system label | 5U system label |
| | | | RS422/2 & GPI/O |

4. Rear Panels, Specification, and Connectors [CLARITY]

| Pin | Connection |
|-----|--------------------------|
| 1 | GPO 2 positive |
| 2 | GPO 1 positive |
| 3 | GPI 1 |
| 4 | Not Connected |
| 5 | GPI 2 |
| 6 | GPO 2 negative |
| 7 | GPO 1 negative |
| 8 | +5v supply 100mA maximum |
| 9 | Ground |
| 10 | Ground |
| 11 | RX- |
| 12 | TX+ |
| 13 | Ground |
| 14 | RX+ |
| 15 | TX- |

4.13.5.3 15-pin high density (HD) D-type female connector (SD/HD VGA monitoring)



| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|----------------------------------|----------------------------------|
| | | ANALOG VIDEO A ANALOG VIDEO B | ANALOG VIDEO A ANALOG VIDEO B |

When outputting standard definition (SD) video, these connectors are designed to be used with a standard PC style VGA to BNC lead. The Analogue Key Video will be present on the HSYNC lead and the Analogue Sync on the VSYNC lead. The output video signals are designed to be connected to a television video monitor and not a SVGA monitor. This is due to the output signals being either 525 line NTSC timing or 625 line PAL timing depending on the software configuration setting of the channel.

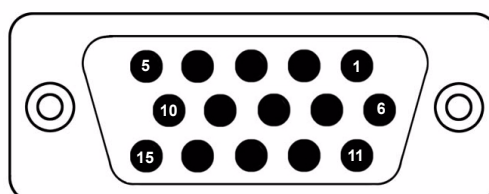
When outputting high definition (HD) video, these connectors are designed to connect to a PC style multi-sync SVGA analogue monitor that is compatible with the HD scan rates being used.

| Pin | SD Connection | HD Connection |
|-----|--------------------------|----------------------|
| 1 | Red / V / S-video Chroma | Red Analogue Video |
| 2 | Green / Y / Composite | Green Analogue Video |
| 3 | Blue / U / S-video Luma | Blue Analogue Video |
| 4 | Not Connected | Not Connected |

4. Rear Panels, Specification, and Connectors [CLARITY]

| Pin | SD Connection | HD Connection |
|-----|---------------------|---------------------|
| 5 | Not Connected | Not Connected |
| 6 | Ground/Video Return | Ground/Video Return |
| 7 | Ground/Video Return | Ground/Video Return |
| 8 | Ground/Video Return | Ground/Video Return |
| 9 | Not Connected | Not Connected |
| 10 | Ground/Video Return | Ground/Video Return |
| 11 | Not Connected | Not Connected |
| 12 | Not Connected | Not Connected |
| 13 | Analogue Key Video | TTL H Sync |
| 14 | Analogue Sync | TTL V Sync |
| 15 | Not Connected | Not Connected |

4.13.5.4 15-pin high density (HD) D-type female connector (SD VGA monitoring)



| 1U system label | 2U system label | 3U system label | 5U system label |
|----------------------|---|---|-----------------|
| ANALOGUE MONITOR OUT | ANALOGUE MONITOR OUT OPT. ANALOGUE AUX/ PREVIEW OUT | ANALOGUE MONITOR OUT OPT. ANALOGUE AUX/ PREVIEW OUT | MON A/B |

These connectors are designed to be used with a standard PC style VGA to BNC lead. The Analogue Key Video will be present on the HSYNC lead and the Analogue Sync on the VSYNC lead. The output video signals are designed to be connected to a television video monitor and not a SVGA monitor. This is due to the output signals being either 525 line NTSC timing or 625 line PAL timing depending on the software configuration setting of the channel.

| Pin | Connection |
|-----|--------------------------|
| 1 | Red / V / S-video Chroma |
| 2 | Green / Y / Composite |
| 3 | Blue / U / S-video Luma |
| 4 | No connection |
| 5 | No connection |
| 6 | Ground |
| 7 | Ground |
| 8 | Ground |
| 9 | No connection |

4. Rear Panels, Specification, and Connectors [CLARITY]

| Pin | Connection |
|-----|--|
| 10 | Ground |
| 11 | No connection |
| 12 | No connection |
| 13 | Composite / Composite / Y (Can be used as mixed syncs) |
| 14 | Connected to pin 13 |
| 15 | No connection |

4.13.5.5 44-pin high density (HD) D-type female connector (multi-purpose)

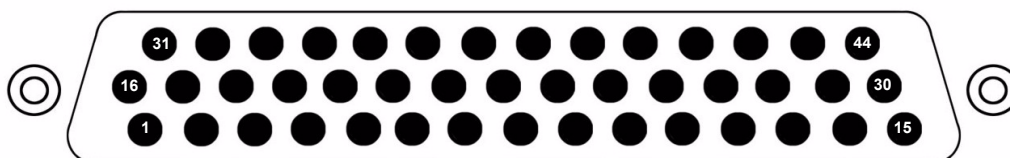
Due to rear panel space limitations, Clarity 100, 200, 300 and 5000 systems employ a 44-pin female HD D-type socket on their respective rear panels to enable the following signal distribution:

T-43 Signal distribution via 44-pin high density (HD) D-type female connector

| Signals | Clarity | | | |
|----------------|---------|-----|-----|------|
| | 100 | 200 | 300 | 5000 |
| GPI/O | ✓ | ✓ | ✓ | ✓ |
| Digital audio | ✓ | ✓ | ✓ | ✓ |
| Analogue audio | ✓ | ✓ | ✓ | |
| Bypass tally | ✓ | ✓ | ✓ | ✓ |
| Watchdog tally | | | | ✓ |
| LTC | ✓ | ✓ | ✓ | ✓ |
| RS232 | ✓ | ✓ | ✓ | |
| RS422 | ✓ | ✓ | ✓ | |

To learn more about creating the relevant cable to use with this connector for Clarity 100, 200 and 300 systems, refer to [“6.1.4.15 Clarity 100, 200 and 300 44-pin breakout communication cable data”](#) on page 6.41 for more information. For Clarity 5000 systems, refer to [“6.1.4.17 Clarity 5000 44-pin breakout communication cable data”](#) on page 6.46 for more information.

With regards to Clarity 100, 200 and 300, pinouts for the connector are dependant on the version of the H096 Standard Definition (SD) Framestore CPU and Input/Output (I/O) + Audio PCB fitted within your system. Refer to [“20.2.3 Framestore CPU and Input/Output \(I/O\) \(H096 and H100\)”](#) on page 20.5 for more information. The version of this PCB can be checked using the **Rack** dialog tab on the **Local Preferences** dialog box. Refer to [“19.4.1.1 Main Board Manufacturing Information status box”](#) on page 19.9 for more information. Differences are highlighted using grey shading in the pinout table.



| 1U system label | 2U system label | 3U system label | 5U system label |
|-------------------------------------|-------------------------------------|-------------------------------------|-----------------|
| GPI/AUDIO/TALLY/LTC/ RS232/RS422 | GPI/AUDIO/TALLY/LTC/ RS232/RS422 | GPI/AUDIO/TALLY/LTC/ RS232/RS422 | AES/GPI/LTC |

4. Rear Panels, Specification, and Connectors [CLARITY]

| Pin | Clarity 100/200/300 H096 revision A connections | Clarity 100/200/300 H096 revision B onwards connections | Clarity 5000 H104 connections |
|-----|---|---|---|
| 1 | AES digital audio 1-2 TX+ (from Clarity) | AES digital audio 1-2 TX+ (from Clarity) | AES digital audio 1-2 RX+ (into Clarity) |
| 2 | AES digital audio 1-2 RX+ (into Clarity) | AES digital audio 1-2 RX+ (into Clarity) | AES digital audio 1-2 TX+ (from Clarity) |
| 3 | AES digital audio 3-4 TX+ | AES digital audio 3-4 TX+ | AES digital audio 3-4 RX+ |
| 4 | AES digital audio 3-4 RX+ | AES digital audio 3-4 RX+ | AES digital audio 3-4 TX+ |
| 5 | LTC IN+ (with LTC option) (into Clarity) | LTC IN+ (with LTC option) (into Clarity) | AES digital audio 5-6 RX+ |
| 6 | LTC OUT (unbalanced, with LTC option) (from Clarity) | LTC OUT (unbalanced, with LTC option) (from Clarity) | AES digital audio 5-6 TX+ |
| 7 | GPI 1 (into Clarity) | GPI 1 (into Clarity) | AES digital audio 7-8 RX+ |
| 8 | GPI 2 (into Clarity) | GPI 2 (into Clarity) | AES digital audio 7-8 TX+ |
| 9 | GPO 1 normally open | GPO 1 normally open | LTC IN+ (with LTC option) (into Clarity) |
| 10 | GPO 2 normally open | GPO 2 normally open | Relay bypass tally (normally closed when bypassed) |
| 11 | RS232 serial port TX (from Clarity) | RS232 serial port TX (from Clarity) | Watchdog bypass tally (normally closed when bypassed) |
| 12 | RS232 serial port RX (into Clarity) | RS232 serial port RX (into Clarity) | GPI 1 (ground to activate, do not drive high above +5v) (into Clarity) |
| 13 | RS232 serial port RTS (from Clarity) | RS232 serial port RTS (from Clarity) | GPI 3 (ground to activate, do not drive high above +5v) (into Clarity) |
| 14 | RS232 serial port CTS (into Clarity) | RS232 serial port CTS (into Clarity) | GPO 1 (normally open when GPO inactive) |
| 15 | Ground (RS232) | Ground (RS232 and GPI/GPO/ TALLY) | GPO 2 (normally open when GPO inactive) |
| 16 | Ground (AES TX 1-2) | Ground (AES TX 1-2) | Ground (AES RX 1-2) (LTC OUT) |
| 17 | Ground (AES RX 1-2) | Ground (AES RX 1-2) | Ground (AES TX 1-2) |
| 18 | Ground (AES TX 3-4) | Ground (AES TX 3-4) | Ground (AES RX 3-4) |
| 19 | Ground (AES RX 3-4) | Ground (AES RX 3-4) | Ground (AES TX 3-4) |
| 20 | Ground (LTC IN) | GPO 3 normally open | Ground (AES RX 5-6) |
| 21 | Ground | GPO 3 wiper | Ground (AES TX 5-6) |
| 22 | Ground | GPO 4 normally open | Ground (AES RX 7-8) |
| 23 | Ground | GPO 4 wiper | Ground (AES TX 7-8) |
| 24 | GPO 1 wiper | GPO 1 wiper | Ground (LTC IN) |
| 25 | GPO 2 wiper | GPO 2 wiper | Relay bypass tally wiper |
| 26 | RS422 serial port TX+ (from Clarity) | RS422 serial port TX+ (from Clarity) | Watchdog bypass tally wiper |
| 27 | RS422 serial port TX- (from Clarity) | RS422 serial port TX- (from Clarity) | Ground |
| 28 | RS422 serial port RX+ (into Clarity) | RS422 serial port RX+ (into Clarity) | Ground |

4. Rear Panels, Specification, and Connectors [CLARITY]

| Pin | Clarity 100/200/300 H096 revision A connections | Clarity 100/200/300 H096 revision B onwards connections | Clarity 5000 H104 connections |
|-----|--|---|--|
| 29 | RS422 serial port RX- (into Clarity) | RS422 serial port RX- (into Clarity) | GPO 1 wiper |
| 30 | Ground (RS422) | Ground (RS422 and GPI/GPO/TALLY) | GPO 2 wiper |
| 31 | AES digital audio 1-2 TX- (from Clarity) | AES digital audio 1-2 TX- (from Clarity) | AES digital audio 1-2 RX- (into Clarity) |
| 32 | AES digital audio 1-2 RX- (into Clarity) | AES digital audio 1-2 RX- (into Clarity) | AES digital audio 1-2 TX- (from Clarity) |
| 33 | AES digital audio 3-4 TX- | AES digital audio 3-4 TX- | AES digital audio 3-4 RX- |
| 34 | AES digital audio 3-4 RX- | AES digital audio 3-4 RX- | AES digital audio 3-4 TX- |
| 35 | LTC IN- (with LTC option) (into Clarity) | LTC IN- (with LTC option) (into Clarity) | AES digital audio 5-6 RX- |
| 36 | Ground (LTC OUT) | Ground (LTC IN/OUT) | AES digital audio 5-6 TX- |
| 37 | GPI 3 (into Clarity) | GPI 3 (into Clarity) | AES digital audio 7-8 RX- |
| 38 | GPI 4 (into Clarity) | GPI 4 (into Clarity) | AES digital audio 7-8 TX- |
| 39 | Analogue audio out - Right (line level unbalanced) | Analogue audio out - Right (line level unbalanced) | LTC IN- (with LTC option) (into Clarity) |
| 40 | Ground (Analogue monitoring audio) | Ground (Analogue monitoring audio) | Relay bypass tally (normally open when bypassed) |
| 41 | Analogue audio out - Left (line level unbalanced) | Analogue audio out - Left (line level unbalanced) | Watchdog bypass tally (normally open when bypassed) |
| 42 | Bypass tally normally open | Bypass tally normally open | GPI 2 (ground to activate, do not drive high above +5v) (into Clarity) |
| 43 | Bypass tally wiper | Bypass tally wiper | GPI 4 (ground to activate, do not drive high above +5v) (into Clarity) |
| 44 | Bypass tally normally closed | Bypass tally normally closed | LTC OUT (with LTC option) (from Clarity) |

4.13.5.5.1 Notes

GPI - connect to ground (through a contact closure) for operation, pulled up to +5v at Clarity end.

GPO relay - up to 30V dc, 0.5A, undedicated contact closure.

Tally relay - up to 30V dc, 0.5A, undedicated contact change over.

AES inputs have power fail relay bypass to AES outputs. Power fail bypass state is indicated by Relay Bypass Tally.

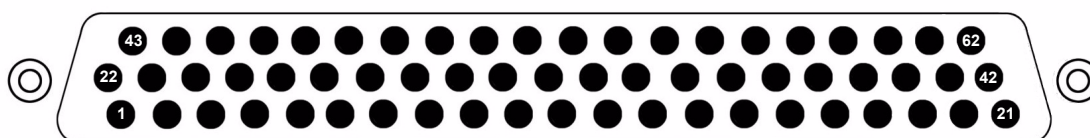
4. Rear Panels, Specification, and Connectors [CLARITY]

4.13.5.6 62-pin high density (HD) D-type female connector (multi-purpose)

Due to rear panel space limitations, Clarity 3000 systems employ a 62-pin female HD D-type socket on the rear panel to enable the following signal distribution:

T-44 Signal distribution via 62-pin high density (HD) D-type female connector

| Signals | Clarity |
|----------------|---------|
| | 3000 |
| GPI/O | ✓ |
| Digital audio | ✓ |
| Analogue audio | ✓ |
| Bypass tally | ✓ |
| Watchdog tally | ✓ |
| LTC | ✓ |
| RS232 | ✓ |
| RS422 | ✓ |



| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|---------------------------------------|-----------------|
| | | GPI/O/AUDIO/TALLY/LTC/ RS232/RS422 | |

| Pin | Clarity 3000 H113 connections |
|-----|--|
| 1 | AES digital audio 1-2 RX+ (into Clarity) |
| 2 | AES digital audio 1-2 TX+ (from Clarity) |
| 3 | AES digital audio 3-4 RX+ |
| 4 | AES digital audio 3-4 TX+ |
| 5 | AES digital audio 5-6 RX+ |
| 6 | AES digital audio 5-6 TX+ |
| 7 | AES digital audio 7-8 RX+ |
| 8 | AES digital audio 7-8 TX+ |
| 9 | LTC IN+ (with LTC option) (into Clarity) |
| 10 | Relay bypass tally (normally closed when bypassed) |
| 11 | Watchdog bypass tally (normally closed when bypassed) |
| 12 | GPI 1 (ground to activate, do not drive high above +5v) (into Clarity) |
| 13 | GPI 3 (ground to activate, do not drive high above +5v) (into Clarity) |

4. Rear Panels, Specification, and Connectors [CLARITY]

| Pin | Clarity 3000 H113 connections |
|-----|--|
| 14 | GPO 1 (normally open when GPO inactive) |
| 15 | GPO 2 (normally open when GPO inactive) |
| 16 | GPO 3 (normally open when GPO inactive) |
| 17 | GPO 4 (normally open when GPO inactive) |
| 18 | RS422 TX+ (from Clarity) |
| 19 | RS422 RX+ (into Clarity) |
| 20 | Ground (RS422) |
| 21 | Analogue audio out - Left (line level unbalanced) (from Clarity) |
| 22 | Ground (AES RX 1-2) (LTC OUT) |
| 23 | Ground (AES TX 1-2) |
| 24 | Ground (AES RX 3-4) |
| 25 | Ground (AES TX 3-4) |
| 26 | Ground (AES RX 5-6) |
| 27 | Ground (AES TX 5-6) |
| 28 | Ground (AES RX 7-8) |
| 29 | Ground (AES TX 7-8) |
| 30 | Ground (LTC IN) |
| 31 | Relay bypass tally wiper |
| 32 | Watchdog bypass tally wiper |
| 33 | Ground |
| 34 | Ground |
| 35 | GPO 1 wiper |
| 36 | GPO 2 wiper |
| 37 | GPO 3 wiper |
| 38 | GPO 4 wiper |
| 39 | RS422 TX- (from Clarity) |
| 40 | RS422 RX- (into Clarity) |
| 41 | Ground (RS422) |
| 42 | Ground (Audio) |
| 43 | AES digital audio 1-2 RX- (into Clarity) |
| 44 | AES digital audio 1-2 TX- (from Clarity) |
| 45 | AES digital audio 3-4 RX- |
| 46 | AES digital audio 3-4 TX- |
| 47 | AES digital audio 5-6 RX- |
| 48 | AES digital audio 5-6 TX- |
| 49 | AES digital audio 7-8 RX- |
| 50 | AES digital audio 7-8 TX- |

4. Rear Panels, Specification, and Connectors [CLARITY]

| Pin | Clarity 3000 H113 connections |
|-----|--|
| 51 | LTC IN- (with LTC option) (into Clarity) |
| 52 | Relay bypass tally (normally open when bypassed) |
| 53 | Watchdog bypass tally (normally open when bypassed) |
| 54 | GPI 2 (ground to activate, do not drive high above +5v) (into Clarity) |
| 55 | GPI 4 (ground to activate, do not drive high above +5v) (into Clarity) |
| 56 | LTC OUT (with LTC option) (from Clarity) |
| 57 | RS232 RXD (into Clarity) |
| 58 | RS232 TXD (from Clarity) |
| 59 | RS232 RTS (from Clarity) |
| 60 | RS232 CTS (into Clarity) |
| 61 | Ground (RS232) |
| 62 | Analogue audio out - Right (line level unbalanced) (from Clarity) |

4.13.5.6.1 Notes

GPI - connect to ground (through a contact closure) for operation, pulled up to +5v at Clarity end.

GPO relay - up to 30V dc, 0.5A, undedicated contact closure.

Tally relay - up to 30V dc, 0.5A, undedicated contact change over.

AES inputs have power fail relay bypass to AES outputs. Power fail bypass state is indicated by Relay Bypass Tally.

4.13.6 Analogue Audio

4.13.6.1 RCA Phono



| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|-----------------|-------------------|
| | | | LEFT/RIGHT L/R |

| Colour | Connection |
|--------|--------------------------|
| | Line level unbalanced |
| White | Left analogue audio out |
| Red | Right analogue audio out |

4.13.6.2 3.5mm stereo jack



| 1U system label | 2U system label | 3U system label | 5U system label |
|-----------------|-----------------|-----------------|-----------------|
| | | | ANALOG AUDIO |

| Connection | |
|------------|--|
| Tip | Left analogue line level audio out (unbalanced) |
| Ring | Right analogue line level audio out (unbalanced) |
| Shield | Ground |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.14 Peripherals and related rear panel information

4.14.1 RapidAction keyboard

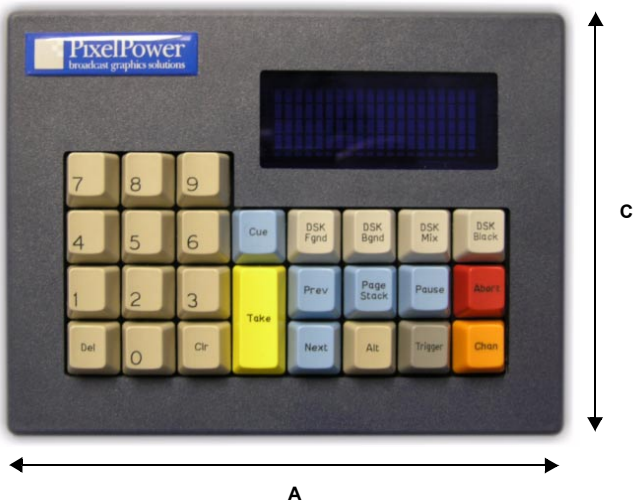
Refer to “17. Keyboard” on page 17.1 for more information.



T-45 RapidAction keyboard specifications

| Variable | | Value |
|----------|---|--------------------------------|
| Width | A | 469mm |
| Height | B | 43mm (61mm with legs extended) |
| Depth | C | 218mm |
| Weight | | 1.75kg |

4.14.2 RapidRecall keypad (optional)



T-46 RapidRecall keypad specifications

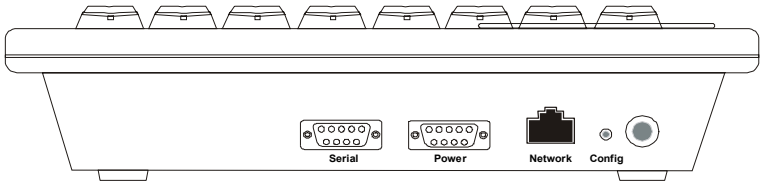
| Variable | | Value |
|----------|---|-------|
| Width | A | 196mm |
| Height | B | 49mm |
| Depth | C | 147mm |
| Weight | | 0.6kg |

4. Rear Panels, Specification, and Connectors [CLARITY]

4.14.2.1 Rear panel connectors

The following connectors are provided on the rear of the keypad.

F-45 RapidRecall keypad panel rear panel



| Item | Description |
|---------|-------------------------------------|
| Serial | 9-pin D-type male RS232 serial port |
| Network | Ethernet 10/100 RJ45 connector |
| Config | Boot configuration |
| Power | 9-pin D-type male RS232 serial port |

4.14.3 Intuos 2 A5 and A3 tablet (optional)



4. Rear Panels, Specification, and Connectors [CLARITY]

5. Clarity Power Supply Units (PSU)

[CLARITY]

This section details the types of PSU available with Clarity system units.

5.1 Clarity 100 STYLE A system

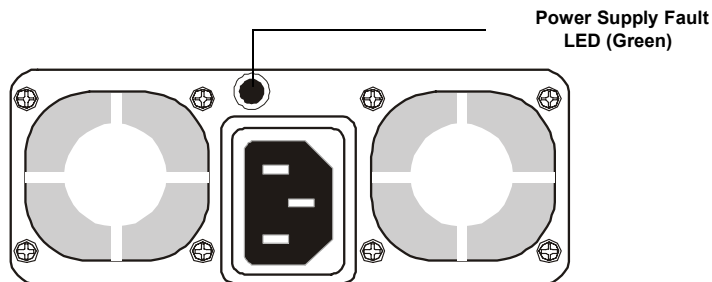
[SD]

5.1.1 Single non-redundant 350W PSU

The Clarity 100 STYLE A chassis features a single 350W PSU.

5.1.1.1 Rear panel

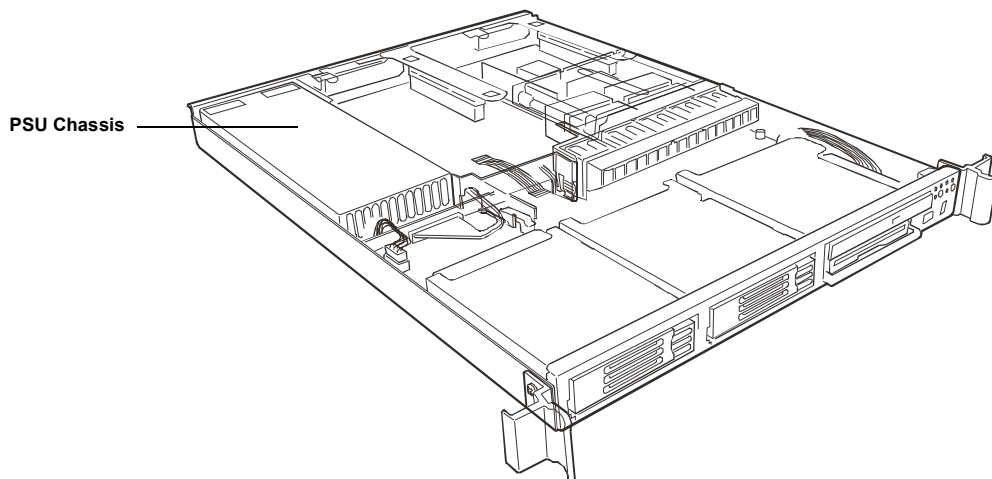
F-46 Clarity 100 STYLE A 350W PSU power supply (rear)



5.1.1.2 Location, features, specification and protections

The 350W power supply supports Power Factor Correction (PFC) and accepts AC input directly from the power source. The power sub-system includes a remote enable feature, which permits the power to be activated from a variety of sources, and allows the implementation of other remote management features.

F-47 Clarity 100 PSU location



5.1.1.2.1 Over Temperature Protection (OTP)

The power supply will be protected against over temperature conditions caused by loss of fan cooling or excessive ambient temperature. In an OTP condition the PSU will shutdown. When the power supply temperature drops to within specified limits, the power supply shall restore power automatically, while the 5V stand-by remains always on. The OTP circuit must have built in hysteresis such that the power supply will not oscillate on and off due to temperature recovering condition. The OTP trip level shall have a minimum of 4 °C of ambient temperature hysteresis.

5. Clarity Power Supply Units (PSU) [CLARITY]

5.1.1.2.2 Over Voltage Protection (OVP)

The power supply Over Voltage Protection (OVP) is locally sensed. The power supply shall shutdown and latch off after an over-voltage condition occurs. This latch shall be cleared by toggling the PSON # signal or by an AC power interruption. The following table contains the over-voltage limits. The values are measured at the output of the power supply's connectors.

T-47 Clarity 100 Over Voltage Protection (OVP) Limits

| Output Voltage | MIN (V) | MAX (V) |
|----------------|---------|---------|
| +3.3 V | 3.9 | 4.5 |
| +5 V | 5.7 | 6.2 |
| +12 | 13.3 | 14.5 |
| -12V | -13.3 | -14.5 |
| +5VSB | 5.7 | 6.5 |

The voltage shall never exceed the maximum levels when measured at the power pins of the power supply connector during any single point of fail. The voltage shall never trip any lower than the minimum levels when measured at the power pins of the power supply connector.

5.1.1.3 PSU status

Each power supply module provides a single external green LED to indicate power supply status. When AC is applied to the PSU and stand-by voltages are available, the LED will blink green. The LED will turn continuously green to indicate that all the power outputs are available.

For conditions of the LED, refer to [“T-48 Clarity 100 PSU conditions and Power Supply Fault LED states”](#) on page 5.2 for more information.

T-48 Clarity 100 PSU conditions and Power Supply Fault LED states

| PSU Condition | Power Supply LED |
|---------------------------------------|------------------|
| No AC power to all PSU | OFF |
| AC present / Only stand-by outputs ON | BLINK GREEN |
| Power supply DC outputs ON and OK | GREEN |

5.2 Clarity 200 STYLE A system

[SD]

5.2.1 Dual-redundant 500W PSU cage

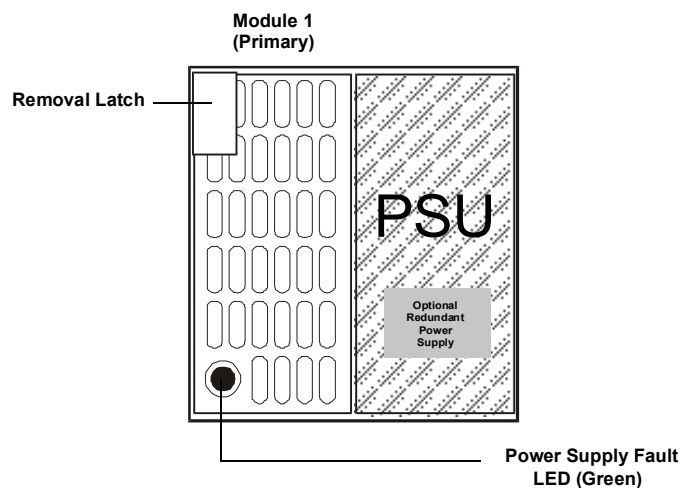
The Clarity 200 STYLE A chassis features a dual-redundant capable 1+1 PSU cage as standard.

As standard, when a Clarity 200 STYLE A chassis is ordered, it features only a single swappable PSU module. A second module **MUST** be ordered to enable dual redundancy (*Pixel Power Part PP8431*).

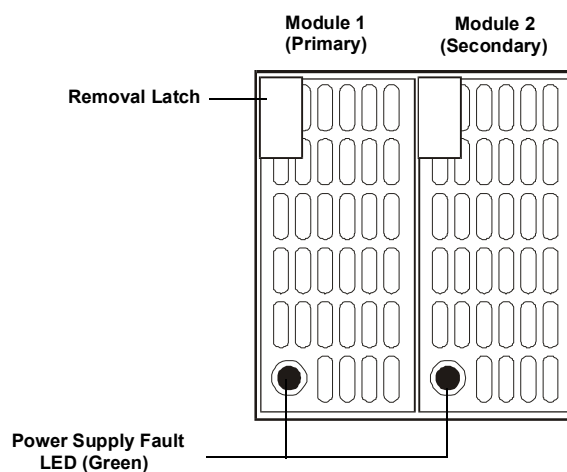
Dual redundancy provides improved reliability. The PSU features dual redundancy in both the mains supply and the PSU modules. In the event that one mains supply fails, one PSU module fails or both, the Clarity 200 system unit will keep operating. For best redundancy protection (as above), use in conjunction with redundant mains circuits, so an independent power circuit powers each AC input.

5.2.1.1 Rear panel

F-48 Clarity 200 STYLE A 500W PSU power supply cage (rear)



F-49 Clarity 200 STYLE A optional 500W PSU power supply cage (rear)



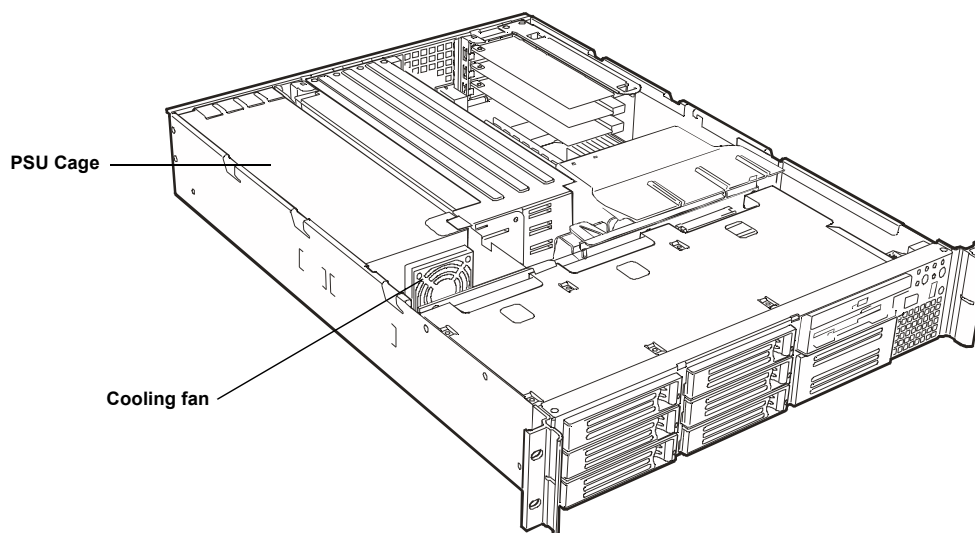
5.2.1.2 Location, features, specification and protections

The Clarity 200 PSU cage supports one 500W PSU module for a non-redundant configuration, or two in a 1+1 redundant configuration. The power supply module provides three outputs; 5V, 12V, and -12V.

5. Clarity Power Supply Units (PSU) [CLARITY]

The power supply module contains no fans. However, a fan in the power supply cage provides cooling to each module. The cooling air enters the subsystem from the DC connector side, passing through the power supply. The air flowing through the power supply is pre-heated by the system. Inlet air to the power supply shall be in the range of 0 to 50 °C. The cage provides 8 CFM at 50 C per module for a 480W total cage load.

F-50 Clarity 200 PSU cage location and module cooling fan



Each module provides a handle to assist in insertion and extraction and can be inserted and extracted without the assistance of any tools.

T-49 Clarity 200 module output (amperes) summary

| | +12V | -12V | 5VSB |
|--------------------|-------------|-------------|-------------|
| MAX | 40A | 0.5A | 2.5A |
| MIN STATIC | 0A | 0A | 0A |
| MIN DYNAMIC | 1.5A | 0A | 0A |

The Clarity 200 PSU cage supports the hot swapping of power supply modules in the 1+1 redundant configuration. Hot swapping a power supply module is the process of extracting and inserting a power supply module from an operating Clarity 200 system unit.

5. Clarity Power Supply Units (PSU) [CLARITY]

5.2.1.3 PSU failure

5.2.1.3.1 Notification

Each power supply module provides a single external bi-colour LED to indicate the status of the power supply. When AC is applied to the PSU and stand-by voltages are available, the LED will blink green. The LED will be solid on green to indicate that all the power outputs are available.

The LED will be solid on amber to indicate that the power supply has failed, shutdown due to over current, shutdown due to over temperature, or is indicating a predictive failure.

In the event of a PSU module failure, the following sequence of events will occur. The bi-colour **Power Supply Fault LED**, which is normally green and on constantly, will change state (via either colour, display continuity or a combination of both).



Refer to [“T-50 PSU conditions and corresponding PSU fault LED states”](#) on page 5.5 for more information.

At the same time, the System Status LED on the Clarity 200 front panel will also change state to indicate a possible fault with the system unit.



Refer to [“19.1 1U and 2U Clarity system physical monitoring”](#) on page 19.1 for more information.

T-50 PSU conditions and corresponding PSU fault LED states

| PSU Condition | Power Supply LED |
|--|------------------|
| No AC power to all PSU | OFF |
| No AC power to this PSU only | AMBER |
| AC present / Only stand-by outputs On | BLINK GREEN |
| Power supply DC outputs ON and OK | GREEN |
| Power supply failure (includes over voltage, over temperature) | AMBER |
| VRM failure (cage related) | BLINK GREEN |
| 240VA limit (cage related) | BLINK GREEN |
| Current limit | AMBER |

5. Clarity Power Supply Units (PSU) [CLARITY]

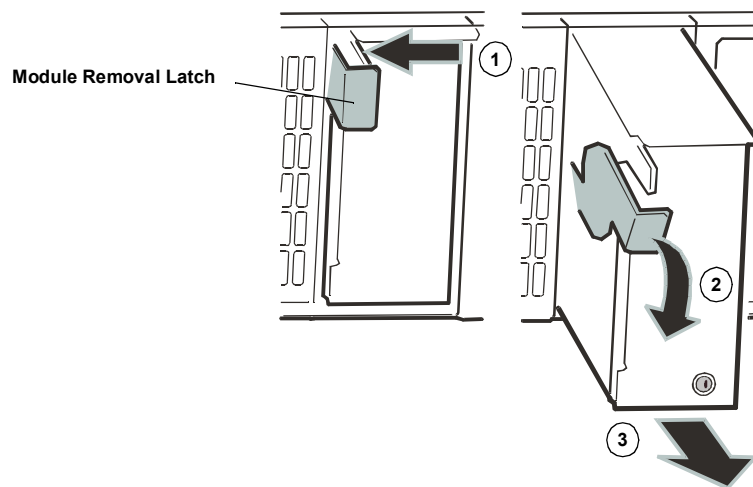
5.2.1.3.2 Removing a faulty PSU module

To remove a PSU module, follow the steps below:

If you do not have the second, redundant power supply module, you must take the Clarity 200 system unit out of service before replacing the single module.

1. Squeeze the module handle to depress the Module Removal Latch (1) that is on the left side of the handle.
2. Rotate the handle down (2) while pulling the module toward you (3). As you pull the module out, support the module with your free hand.

F-51 Unlocking and removing a dual-redundant PSU module



5.2.1.3.3 Replacing a PSU module

To replace a PSU module, follow the steps below:

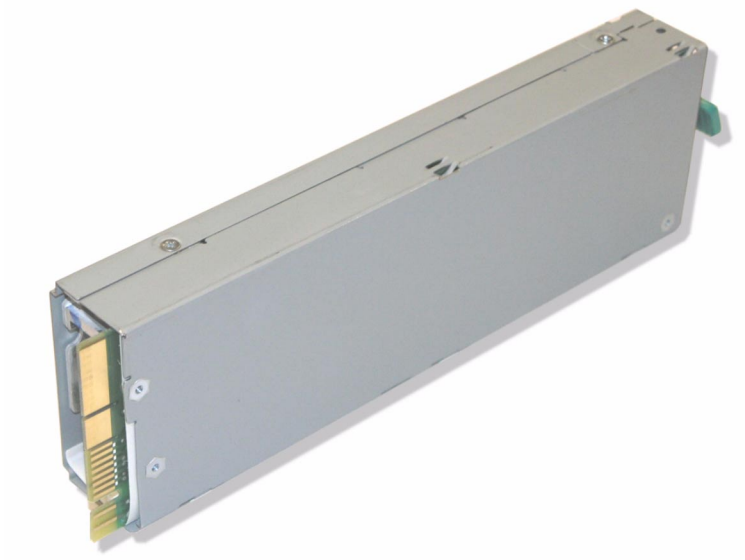
1. Insert a new power supply module in the bay.
2. Grip the module handle, rotate it down, and push the module into the bay.
3. When the module is nearly all of the way in, the handle will rotate up. At this time, push firmly on the front of the handle to lock the latch.
4. The power supply module is now functional and the power supply fault indicator should not be lit.

5. Clarity Power Supply Units (PSU) [CLARITY]

5.2.1.4 Reference

5.2.1.4.1 Photos

F-52 Dual-redundant PSU module (rear)



F-53 Dual-redundant PSU module (front)



5. Clarity Power Supply Units (PSU) [CLARITY]

5.3 Clarity 300 STYLE A and Clarity 3000 STYLE A systems

5.3.1 Dual-redundant 460W PSU cage

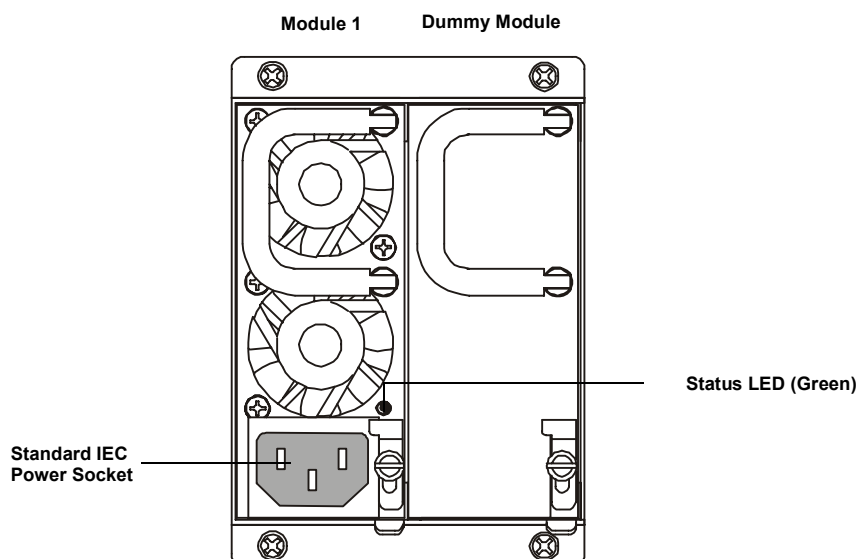
The Clarity 300 STYLE A and Clarity 3000 STYLE A chassis features a dual-redundant capable 1+1 PSU cage as standard.

As standard, when a Clarity 300 STYLE A or Clarity 3000 STYLE A system is ordered, it features only a single swappable PSU module together with a dummy module. A second, functional module **MUST** be supplied to enable dual redundancy.

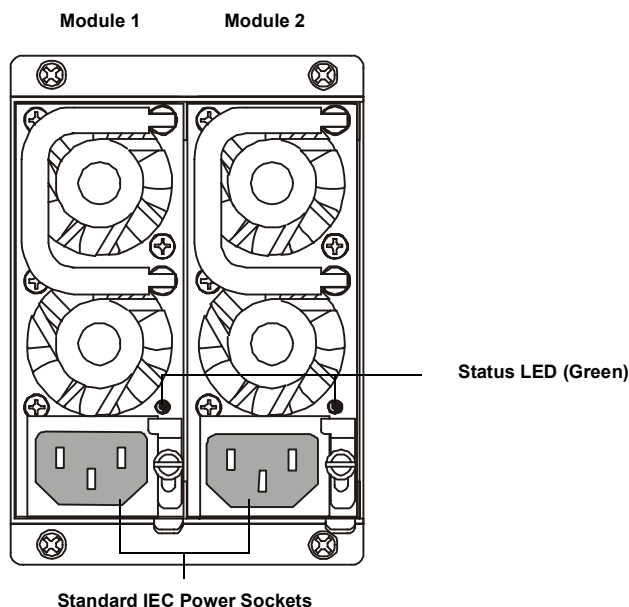
The dual redundant power supply provides improved reliability. The PSU features dual redundancy in both the mains supply and the PSU modules. In the event that one mains supply fails, one PSU module fails or both, the Clarity system unit will keep operating. For best redundancy protection (as above), use in conjunction with redundant mains circuits, so an independent power circuit powers each AC input.

5.3.1.1 Rear panel

F-54 Clarity 300 STYLE A and Clarity 3000 STYLE A standard 460W PSU cage (rear)



F-55 Clarity 300 STYLE A and Clarity 3000 STYLE A optional dual-redundant 460W PSU (rear)



5. Clarity Power Supply Units (PSU) [CLARITY]

5.3.1.2 Features, specification and protections

T-51 Features

| Features |
|---|
| AC input on each module (input on module 1 is master source, module 2 is the slave source). |
| Auto-select AC input. |
| Hot-swappable and hot pluggable redundancy when both modules are fitted. |

T-52 Specification

| Specification |
|--|
| AC Input Voltage: 90 to 132 or 180 to 264 auto-selectable 47Hz ~ 63Hz. |
| DC Output: 460W maximum. |

T-53 Voltage and power protections

| Voltage and Power Protections |
|--|
| Over Voltage Protection Standard on +5.0V output, set at 6.5VDC. |
| Short Circuit Protection A short circuit placed between the DC return and the output prevents damage and the power supply will shutdown. |
| Over Power Protection The power supply will shut down in the event of the output power exceeding 110% to 160% of full load. A subsequent power-on-cycle should be performed. |

5.3.1.3 PSU failure

5.3.1.3.1 Notification

In the event of a PSU module failure, the following sequence of events will occur:

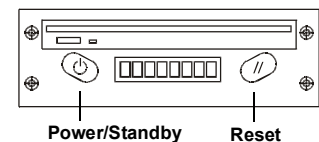
1. An alarm will sound on the PSU module and the green **Status LED**, which is normally constantly on, will extinguish.
2. After a few seconds, a buzzer on the H106 SCSI/SATA/Power System Backplane PCB will sound.
3. At the same time, the scrolling display message on the H105 Front Panel display PCB will change to:

PSU FAIL



5.3.1.3.2 Cancelling the alarm

To cancel the PSU alarm, press and hold in the **Power** and **Reset** buttons at the same time on the system unit front panel. Momentarily, the scrolling display message on the H105 Front Panel display PCB will change to ALARM OFF before resuming the PSU FAIL message.



5.3.1.3.3 Removing a faulty PSU module

To remove a PSU module, follow the steps below:



If you do not have the second, redundant power supply module, you must take the Clarity 300 or Clarity 3000 system unit out of service before replacing the single module.

5. Clarity Power Supply Units (PSU) [CLARITY]



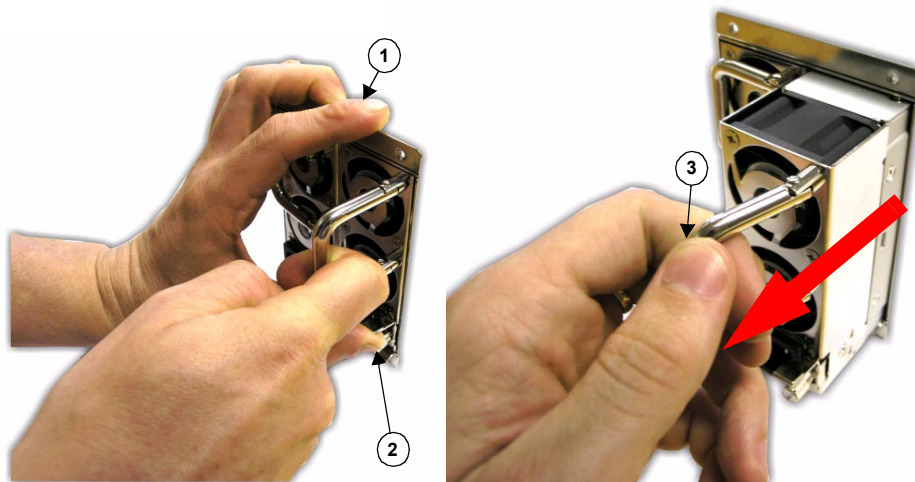
Due to the casing of PSU modules being used as a heat sink for cooling, PSU module temperature can reach 60°C under full load conditions. Please do not remove the defective power module unless you are wearing suitable heat proof gloves. The pictures below show PSU module removal from a PSU enclosure that has not been in operation.

1. Loosen the retaining thumbscrew located at the bottom of the module using thumb and forefinger. Refer to “[F-56 Loosening the PSU module retaining thumbscrew](#)” on page 5.10 for more information.
2. Whilst pressing against the PSU enclosure with the left hand (1), push up and hold the retaining mechanism at the bottom of the module with the left thumb (2). At the same time, pull the module from the PSU cage using the metal U handle (3). Refer to “[F-57 Removing a PSU module](#)” on page 5.10 for more information.

F-56 Loosening the PSU module retaining thumbscrew



F-57 Removing a PSU module



5.3.1.4 Replacing a PSU module

1. To replace a PSU module, slide it back into the PSU enclosure until it clicks into place.

5. Clarity Power Supply Units (PSU) [CLARITY]

2. Tighten the retaining thumbscrew located at the top of the module.

The buzzer on the H106 SCSI/SATA/Power System Backplane PCB should now stop sounding if it has not been cancelled already.

5.3.1.5 Reference

5.3.1.5.1 Photos

F-58 PSU module (front and rear)



5. Clarity Power Supply Units (PSU) [CLARITY]

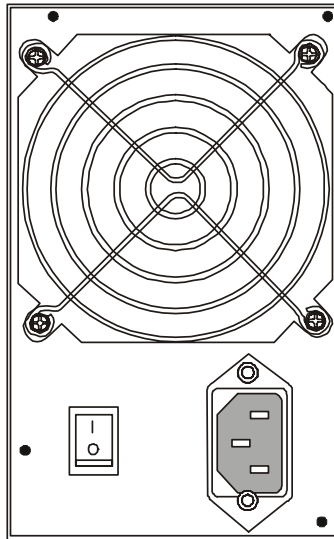
5.4 Clarity 2 STYLE C and Clarity 500 STYLE A systems [LEGACY]

5.4.1 Single non-redundant 460W PSU

The Clarity 2 STYLE C and Clarity 500 STYLE A chassis feature a single non-redundant PSU as standard.

5.4.1.1 Rear panel

F-59 Clarity 500 STYLE A non-redundant 460W PSU



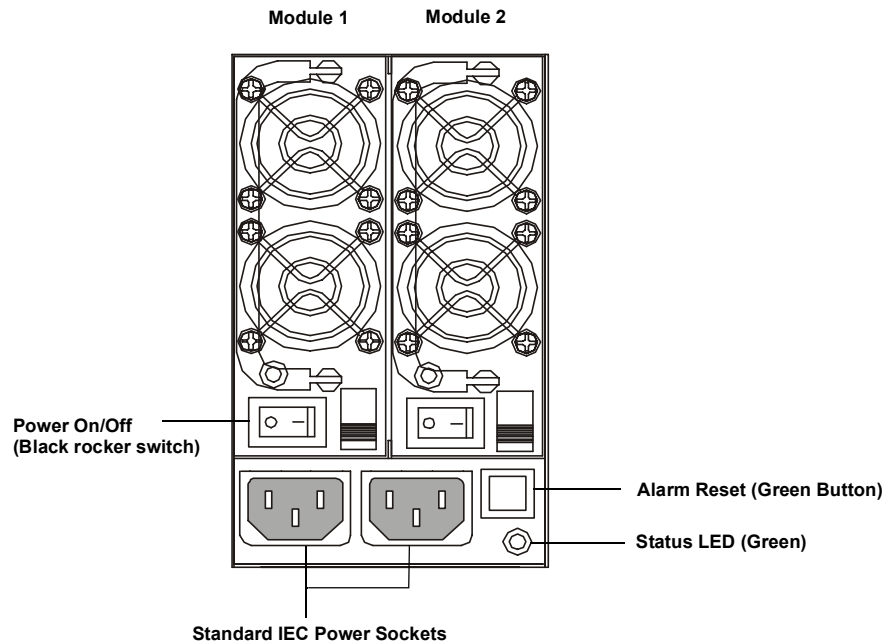
5. Clarity Power Supply Units (PSU) [CLARITY]

5.4.2 Optional dual-redundant 500W PSU

The Clarity 2 STYLE C and Clarity 500 STYLE A chassis can also feature an optional dual-redundant PSU as standard. The dual redundant power supply provides improved reliability. The PSU features dual redundancy in both the mains supply and the PSU modules. In the event that one mains supply fails, one PSU module fails or both, the Clarity system unit will keep operating. For best redundancy protection (as above), use in conjunction with redundant mains circuits, so an independent power circuit powers each AC input.

5.4.2.1 Rear panel

F-60 Clarity 2 STYLE C and Clarity 500 STYLE A optional dual-redundant 500W PSU



5.4.2.2 Features, specification and protections

T-54 Features

| Features |
|--|
| Dual AC inputs (AC-1 is master source, AC-2 slave source). |
| Auto-select AC input. |
| Hot-swappable with power sharing capability. |

T-55 Specification

| Specification |
|--|
| AC Input Voltage: 90 to 132 or 180 to 264 auto-selectable 47Hz ~ 63Hz. |
| DC Output: 500W maximum. |

T-56 Voltage and power protections

| Voltage and Power Protections |
|---|
| Over Voltage Protection Standard on +5.0V output, set at 6.25VDC. |

5. Clarity Power Supply Units (PSU) [CLARITY]

Voltage and Power Protections

Short Circuit Protection

A short circuit placed between the DC return and the output prevents damage and the power supply will shutdown.

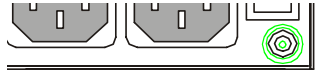
Over Power Protection

The power supply will shut down in the event of the output power exceeding 130% to 160% of full load. A subsequent power-on-cycle should be performed.

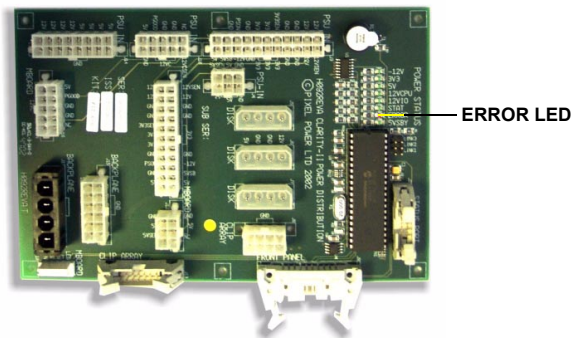
5.4.2.3 PSU failure

5.4.2.3.1 Notification

In the event of a PSU module failure, the following sequence of events will occur:

1. An alarm will sound on the PSU module and the green **Status LED**, which is normally constantly on, will start flashing. 
2. After a few seconds, a buzzer on the H092 Power Distribution PCB will sound and the orange **ERROR LED** on the PCB will start flashing.

F-61 ERROR LED on H092 Power Distribution PCB



3. At the same time, an orange LED will flash in the H095 Front Panel display PCB, and the scrolling display message will change to:

POWER FAILURE: PSU MODULE X FAIL

where X is the number of the module that has failed. When looking at the rear of a Clarity system unit, module 1 is on the left and module 2 is on the right.

5.4.2.3.2 Cancelling the alarm

To cancel the alarm, press the green **Alarm Reset** button above the green **Status LED**. The buzzer on the H092 Power Distribution PCB will continue to sound until both modules are fully functional.

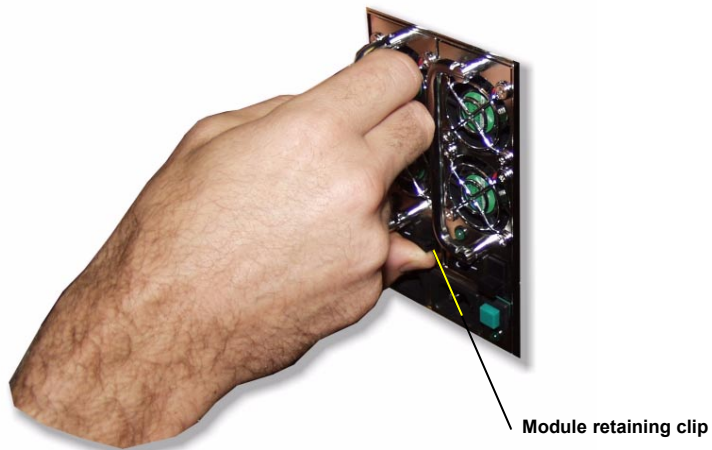
5.4.2.3.3 Removing a faulty PSU module

To remove a PSU module, follow the steps below:

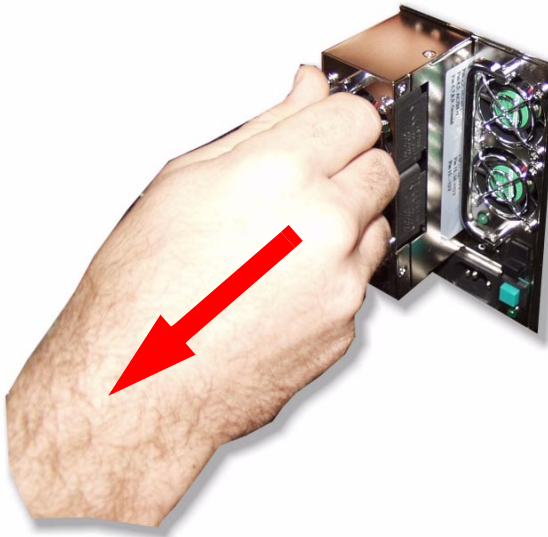
1. Make sure that faulty module is switched off by switching the relevant rocker switch to the O position.
2. Whilst gripping the metal U handle with the right-hand, slide the black retaining clip, located just above the switch, upwards and hold with the left-hand thumb. Refer to [“F-62 Unlocking a dual-redundant PSU module”](#) on page 5.15 for more information.
3. With the right-hand, use the metal U handle to pull out the module from the PSU enclosure. Refer to [“F-63 Removing a dual-redundant PSU module”](#) on page 5.15 for more information.

5. Clarity Power Supply Units (PSU) [CLARITY]

F-62 Unlocking a dual-redundant PSU module



F-63 Removing a dual-redundant PSU module



5.4.2.4 Replacing a PSU module

1. To replace a PSU module, slide it back into the PSU enclosure until it clicks into place.
2. Switch the new module on by pressing the black rocker switch to the I position.

The buzzer on the H092 Power Distribution PCB should now stop sounding.

5. Clarity Power Supply Units (PSU) [CLARITY]

5.4.2.5 Reference

5.4.2.5.1 Photos

F-64 PSU module (front and rear)



5.5 Clarity 500 STYLE B systems

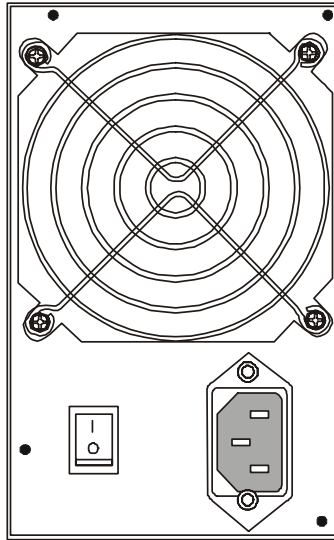
[LEGACY]

5.5.1 Single non-redundant 460W PSU

The Clarity 500 STYLE B chassis features a single non-redundant PSU as standard.

5.5.1.1 Rear panel

F-65 Clarity 500 STYLE B non-redundant 460W PSU



5.5.2 Optional dual-redundant 500W PSU

Refer to [“5.6.1 Dual-redundant 500W PSU cage”](#) on page 5.18 for more information.

5. Clarity Power Supply Units (PSU) [CLARITY]

5.6 Clarity 500 STYLE C and Clarity 5000 STYLE A systems

5.6.1 Dual-redundant 500W PSU cage

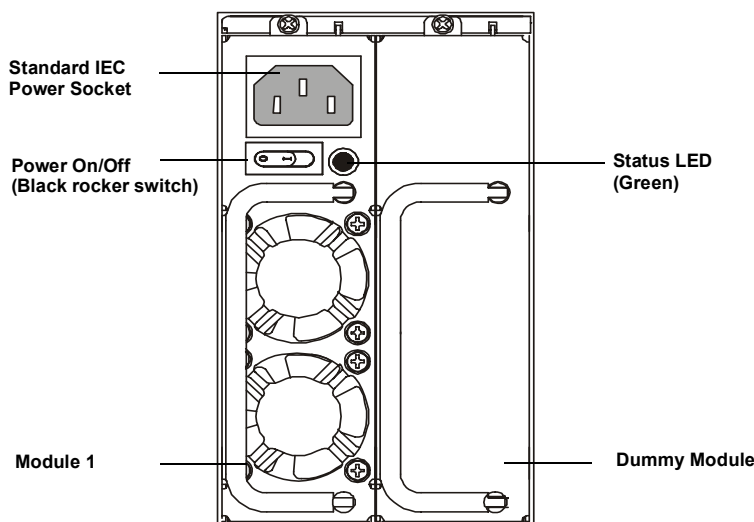
The Clarity 500 STYLE C and Clarity 5000 STYLE A chassis features a dual-redundant capable 1+1 PSU cage as standard.

As standard, when a Clarity 500 STYLE C or Clarity 5000 STYLE A system is ordered, it features only a single swappable PSU module together with a dummy module. A second, functional module **MUST** be supplied to enable dual redundancy.

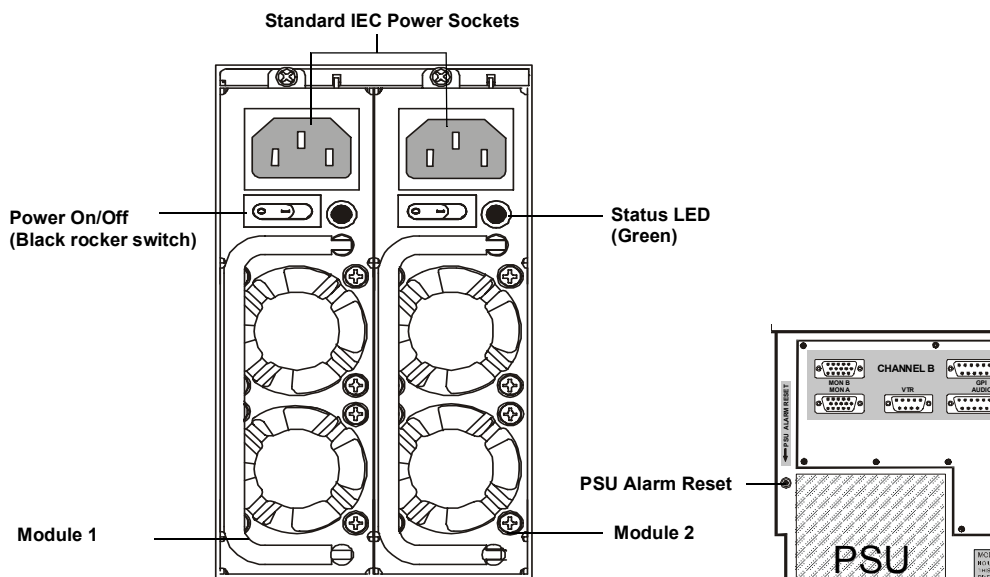
The dual redundant power supply provides improved reliability. The PSU features dual redundancy in both the mains supply and the PSU modules. In the event that one mains supply fails, one PSU module fails or both, the Clarity system unit will keep operating. For best redundancy protection (as above), use in conjunction with redundant mains circuits, so an independent power circuit powers each AC input.

5.6.1.1 Rear panel

F-66 Clarity 500 STYLE C and Clarity 5000 STYLE A standard 500W PSU cage



F-67 Clarity 500 STYLE C and Clarity 5000 STYLE A optional dual-redundant 500W PSU



5. Clarity Power Supply Units (PSU) [CLARITY]

5.6.1.2 Features, specification and protections

T-57 Features

| Features |
|--|
| Dual AC inputs (AC-1 is master source, AC-2 slave source). |
| Auto-select AC input. |
| Hot-swappable with power sharing capability. |

T-58 Specification

| Specification |
|--|
| AC Input Voltage: 90 to 132 or 180 to 264 auto-selectable 47Hz ~ 63Hz. |
| DC Output: 500W maximum. |

T-59 Voltage and power protections

| Voltage and Power Protections |
|--|
| Over Voltage Protection Standard on +5.0V output, set at 6.25VDC. |
| Short Circuit Protection A short circuit placed between the DC return and the output prevents damage and the power supply will shutdown. |
| Over Power Protection The power supply will shut down in the event of the output power exceeding 130% to 160% of full load. A subsequent power-on-cycle should be performed. |

5.6.1.3 PSU failure

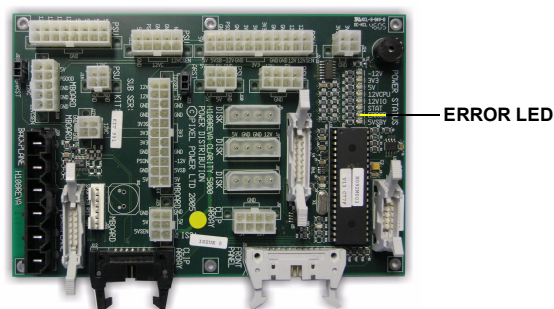
5.6.1.3.1 Notification

In the event of a PSU module failure, the following sequence of events will occur:

1. An alarm will sound on the PSU module and the green **Status LED**, which is normally constantly on, will start flashing.
2. After a few seconds, a buzzer will sound:
 - a) for Clarity 500 STYLE C systems, the buzzer will sound on the H092 Power Distribution PCB and the orange **ERROR LED** on the PCB will start flashing. Refer to “[F-61 ERROR LED on H092 Power Distribution PCB](#)” on page 5.14 for more information.
 - b) for Clarity 5000 STYLE A systems, the buzzer will sound on the H108 Power Distribution PCB and the orange **ERROR LED** on the PCB will start flashing.



F-68 ERROR LED on H108 Power Distribution PCB



5. Clarity Power Supply Units (PSU) [CLARITY]

3. At the same time, an orange LED will flash in the H095 Front Panel display PCB, and the scrolling display message will change to:

POWER SUPPLY FAILURE: PSU MODULE X FAIL

where X is the number of the module that has failed. When looking at the rear of a Clarity system unit, module 1 is on the left and module 2 is on the right.

5.6.1.3.2 Cancelling the alarm

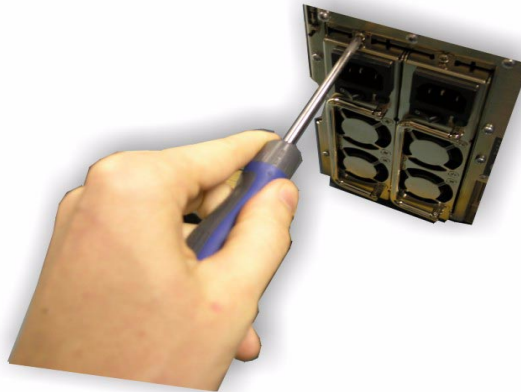
To cancel the alarm, press the green **PSU Alarm Reset** button on the system unit rear panel. The buzzer on the H092 Power Distribution PCB or H108 Power Distribution PCB will continue to sound until both modules are fully functional.

5.6.1.3.3 Removing a faulty PSU module

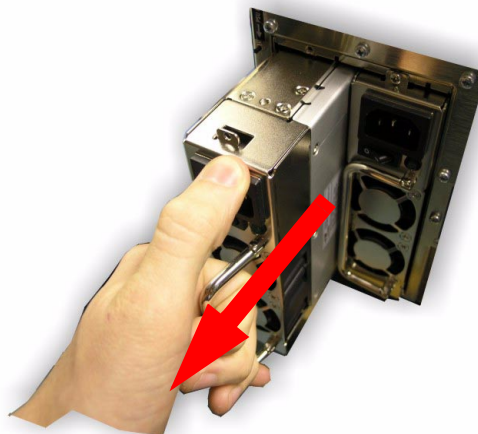
To remove a PSU module, follow the steps below:

1. Make sure that faulty module is switched off by switching the relevant rocker switch to the O position.
2. Remove the retaining screw located at the top of the module using a Posidrive screwdriver. Refer to [“F-69 Removing PSU module retaining screw”](#) on page 5.20 for more information.
3. Use the metal U handle to pull out the module from the PSU enclosure. Refer to [“F-70 Removing a dual-redundant PSU module”](#) on page 5.20 for more information.

F-69 Removing PSU module retaining screw



F-70 Removing a dual-redundant PSU module



5. Clarity Power Supply Units (PSU) [CLARITY]

5.6.1.4 Replacing a PSU module

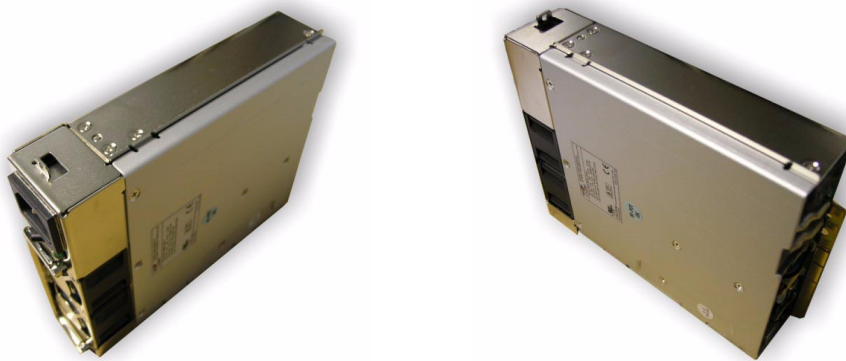
1. To replace a PSU module, slide it back into the PSU enclosure until it clicks into place.
2. Refit the retaining screw located at the top of the module.
3. Switch the new module on by pressing the black rocker switch to the I position.

The buzzer on the H092 Power Distribution PCB or H108 Power Distribution PCB should now stop sounding.

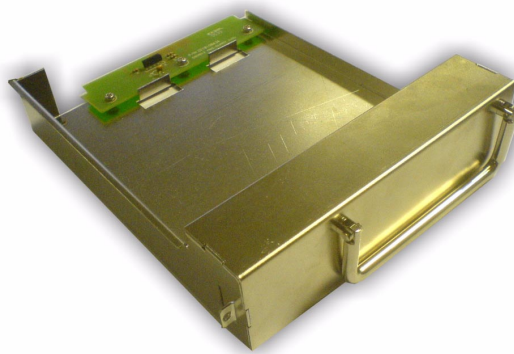
5.6.1.5 Reference

5.6.1.5.1 Photos

F-71 PSU module (front and rear)



F-72 Dummy PSU module



5. Clarity Power Supply Units (PSU) [CLARITY]

6. Clarity and Clarity PREP PC Installation

This chapter explains how to set up a Clarity system unit or the PC that will run the Clarity PREP or Clarity Plugin software. It also explains how to start your system unit or PC running Clarity PREP or Clarity Plugin software.

If you encounter problems when trying to complete this chapter, we recommend that you contact your dealer in the first instance and then Pixel Power technical support. Refer to “22. Support” on page 22.1 for more information.

6.1 Clarity

[CLARITY]

6.1.1 Unpacking the system unit and peripherals

When unpacking, take care not to damage the Clarity system unit or any of the supplied peripherals. When you have unpacked, please retain the packaging in case you need to return the system unit for any reason.

Do not return the system unit unless it is properly packed. If you have any doubts, contact Pixel Power.

IMPORTANT: RETAIN PACKAGING


Please retain this packaging and store in a safe, dry place. Due to the value, nature and weight of this system, when transporting to another site location or back to Pixel Power premises, the original packing must be used otherwise your warranty will be invalidated.


If returning the system to Pixel Power premises for maintenance and additional packaging materials are required due to the original materials being lost or damaged, additional packaging materials are available from Pixel Power.

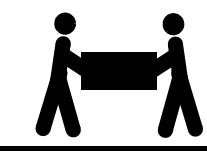
Inadequate packaging may result in shipments to Pixel Power premises being refused at goods in.


If assistance is required when packing this system, please contact Pixel Power technical support.


| PIXEL POWER TECHNICAL SUPPORT | |
|---|---|
| UK technical support | US technical support |
| Address: Pixel Power Ltd. College Business Park Coldhams Lane Cambridge CB1 3AD ENGLAND | Address: Pixel Power Inc. 1000 West McNab Road Pompano Beach FL USA 33069 |
| TEL: +44 (0) 1223 721000 | TEL: +1 (954) 943-2026 |
| FAX: +44 (0) 1223 721111 | FAX: +1 (954) 943-2035 |
| EMAIL: support@pixelpower.com | EMAIL: support@pixelpower.com |
| Office Hours: 8.30am - 6pm GMT Monday - Friday | Office Hours: 9am - 5pm EST Monday - Friday |

**HANDLE
WITH CARE**

**DO NOT
DROP**



**CAUTION
HEAVY**

**KG**
PixelPower
broadcast graphics solutions

The graphics tablet (if supplied), keyboard and manual are packed separately; again, check for damage and inform the shipper immediately if there are any visible signs of damage. Please refer to the packing list included with the product documentation.

If anything appears to be missing, please contact your dealer in the first instance.

6. Clarity and Clarity PREP PC Installation

6.1.2 Recording important information

6.1.2.1 Microsoft Windows product key

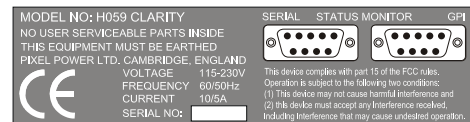
Before installing the system unit in its final location, please make a note of the Microsoft® Windows XP® product key shown on the label on the rear panel or behind the removable front panel on 5U system units; on the top cover of 1U/2U system units and behind the removable front panel on 3U system units.



6.1.2.2 System unit serial number

If you have not done so already, make a note of the serial number located on the rear of the system unit. Keep a record of this number as may be required by Pixel Power support at a later date.

On Clarity 100 system units, the label is located on the flat panel, inside the PSU enclosure recess on the right-hand side of the rear panel.



Refer to [“2. Regulatory Notices, Ratings and Warnings \[CLARITY\]”](#) on page 2.1 for more information.

6.1.2.3 Dongle serial number

If you have not done so already, make a note of the serial number located on the dongle supplied with the system unit. The dongle may already be connected to an available USB port on the system unit rear/front panel.

On Clarity 300 systems, the USB dongle is pre-installed inside the system chassis during production. This reduces the possibility of the dongle being lost or damaged during transit and when installed in a customer location (e.g. rack or outside broadcast vehicle.) For reference purposes, the dongle number is listed on front of the system unit (behind the removable front panel).



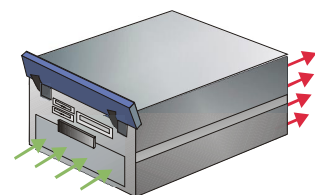
To learn more about removing and refitting an internal USB dongle from a Clarity 300 system unit, refer to [“21.6.1 Removing and re-fitting an internal USB dongle”](#) on page 21.19 for more information.

6.1.3 Installing a system unit

You can either rack-mount a system unit or leave it free-standing on a desk or other suitable surface. Rack-mounting is the recommended choice.

The selected rack must have at least 1U, 2U, 3U or 5U of available space depending on the Clarity model and have adequate rear access to enable the connection and removal of cables and peripherals. The rack should be located in a clean, dry environment and be in close proximity to power and networking resources. Refer to [“2.7 Recommended operating environment”](#) on page 2.8 for more information.

Ensure there is adequate airflow behind the unit; air is taken in through the front panel filter and exhausted from the rear. On 5U and 3U system units, it will be necessary to clean the air filter from time to time; remove it from the front panel and wash in warm water. Dry thoroughly before replacing. Replacement air filters are available if required.



Refer to [“21.1 Air filter maintenance”](#) on page 21.1 for more information.

6. Clarity and Clarity PREP PC Installation

6.1.3.1 Racking-mounting Clarity 1U and 2U system units

When rack mounting Clarity 1U and 2U systems, you can either install a rail guide system or a bracket mount system. Genuine Intel® rail and bracket mounts kits are supplied as standard with 1U and 2U Clarity systems. Instructions detailing the mounting procedure are supplied. Please refer to this Intel® documentation when rack mounting 1U or 2U Clarity systems. Please check that you have received the correct mounting kits by matching the corresponding product codes below. If you wish to order more kits through Pixel Power, the part number is PP8118.

6.1.3.1.1 Intel® Corporation rack and bracket mount kit ordering details

| Product Code | UPC | MM# | Description |
|--------------|--------------|--------|---------------------------------|
| AXX1U2URAIL | 735858147637 | 837071 | Rail kit for SRF1300/SRF2300 |
| FXXBRACKETS | 735858147620 | 837069 | Bracket kit for SRF1300/SRF2300 |

6.1.3.2 Rack-mounting a 3U Clarity system unit

To rack-mount a 3U Clarity system unit using the optional Pixel Power rack mount kit (PP8118), please refer to the mounting instruction sheet that is supplied with the kit for more information. When fitting the extension slide to the side of a 3U Clarity system unit, use M4 screws no more than 8mm in length.



Do not attempt to support the entire weight of a system unit using only the front fixing points. A rack shelf or set of runners must be used.

6.1.3.3 Rack-mounting a 5U Clarity system unit

To rack-mount a 5U Clarity system unit using the optional recessable *0305 Accuride 100%+ Extension Slide*, please refer to the 305-ALR Accuride mounting instruction sheet that is supplied with the kit for more information. When fitting the extension slide to the side of a 5U Clarity system unit, use M4 screws no more than 8mm in length. If you wish to order more kits through Pixel Power, the part number is PP8118.



Do not attempt to support the entire weight of a system unit using only the front fixing points. A rack shelf or set of runners must be used.

6.1.3.3.1 Accuride part numbers and contact details

| Part | Accuride Part Number | Contact Details |
|---|-------------------------|---|
| Telescopic Slides Model 305 Slide Length = 588mm Slide Travel = 581mm Max Load = 45KG | 305-A22-LRD | ADDRESS Accuride International Inc. Corporate Headquarters Santa Fe Springs, California 90670 TEL +1 (562) 903-0200 WEB http://www.accuride.com/ DISTRIBUTORS http://www.accuride.com/distributors_f.html |
| Mounting Kit 57mm Recess Mounting Bracket kit | ACC 4180-0223-XE | |
| Nut Bar kit | 2082 | |

MODEL 305-ALR

**Lock-Out With Front Disconnect
Over-Travel, Light Duty Slide
Up to 140 lb. Capacity***



6. Clarity and Clarity PREP PC Installation

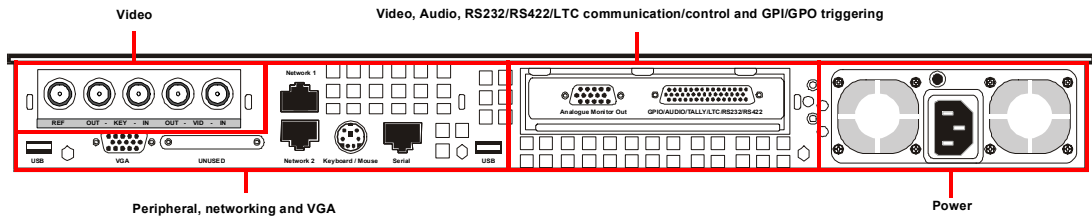
6.1.4 Setting up a system unit

This section describes how to make all necessary connections to a system unit. Please refer to the sections below for information. System units are shown in order, relating to production and release to market date.

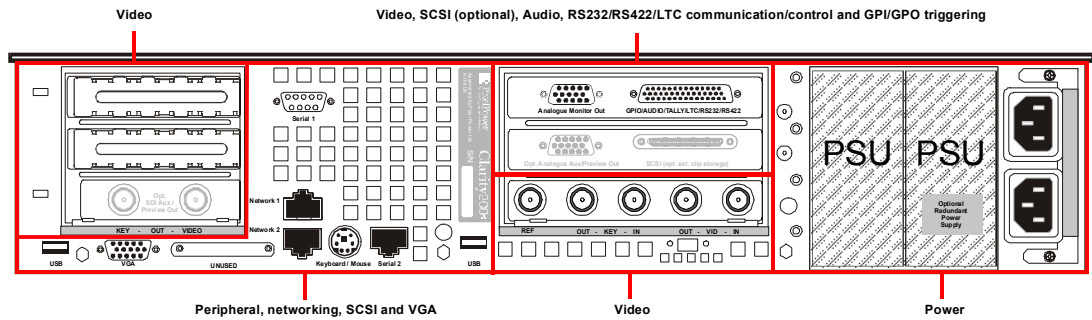
System units marked with the [LEGACY] label are no longer supported or available for purchase.

Please note the rear panels shown below:

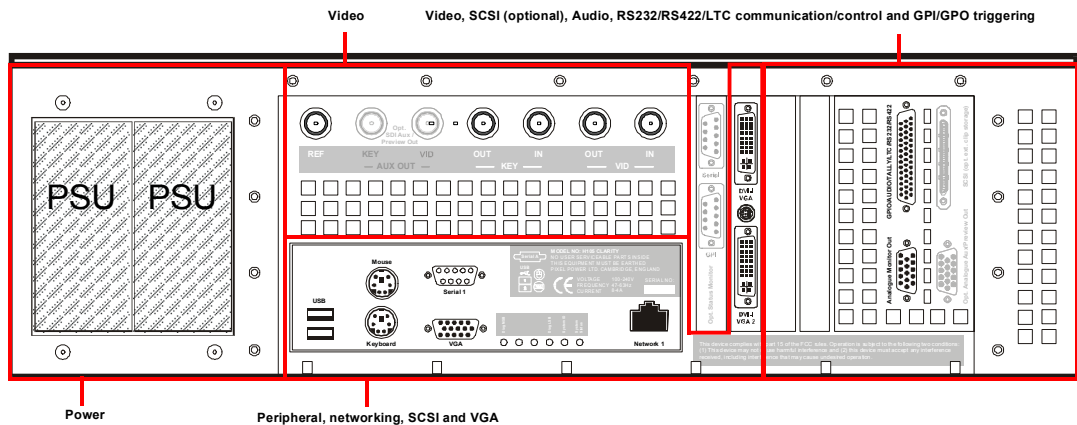
F-73 Clarity 100 STYLE A system unit rear panel



F-74 Clarity 200 STYLE A system unit rear panel

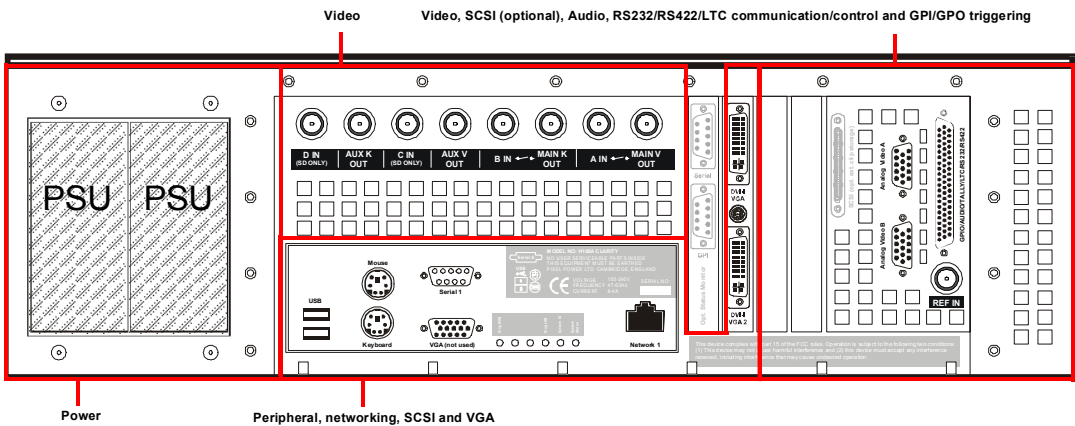


F-75 Clarity 300 STYLE A system unit rear panel

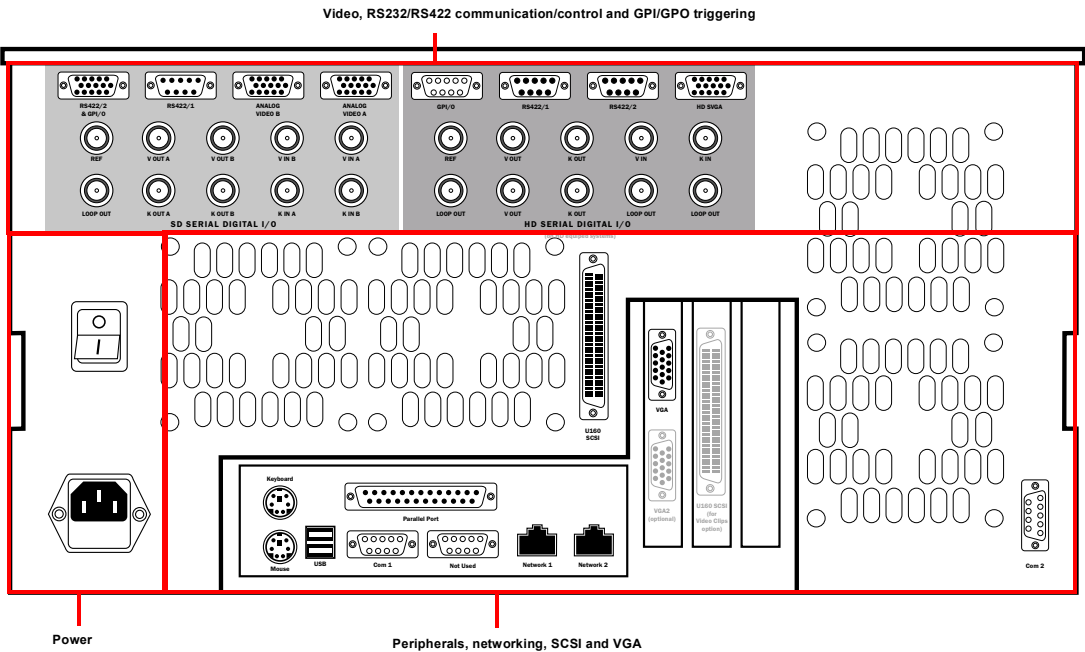


6. Clarity and Clarity PREP PC Installation

F-76 Clarity 3000 STYLE A system unit rear panel

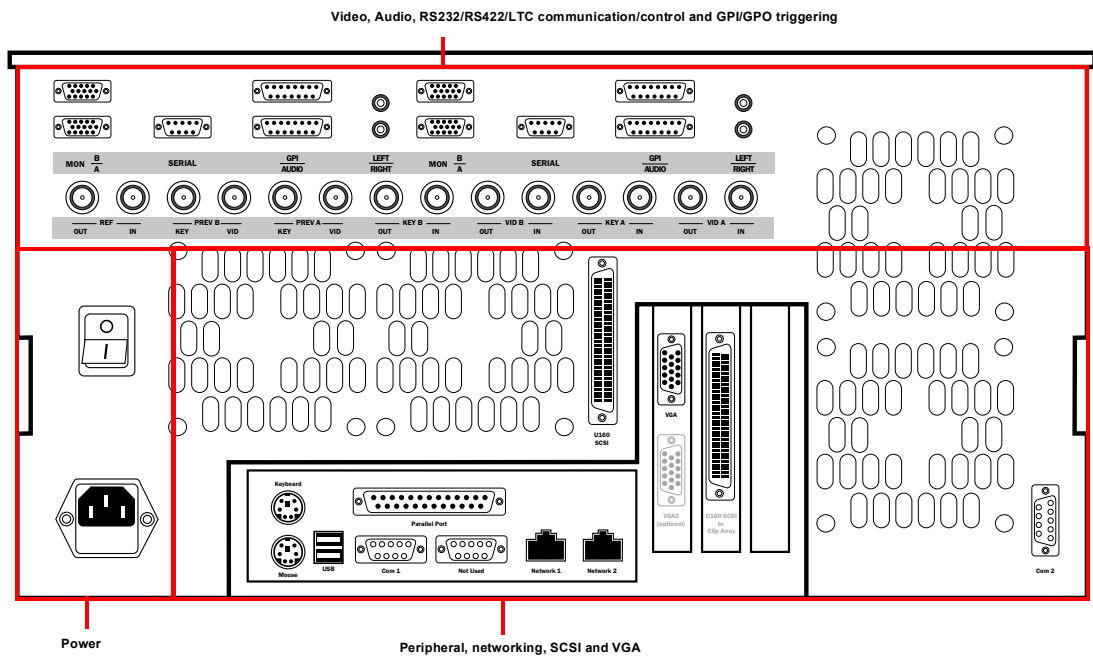


F-77 Clarity STYLE A system unit rear panel [LEGACY]

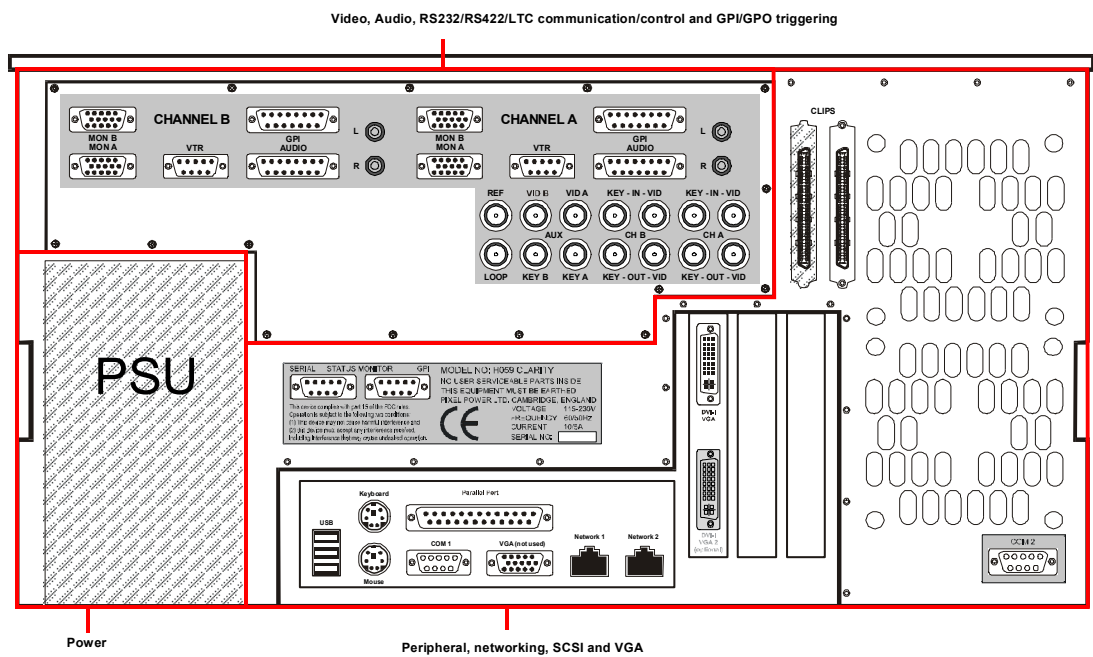


6. Clarity and Clarity PREP PC Installation

F-78 Clarity 2 STYLE B system unit rear panel [LEGACY]

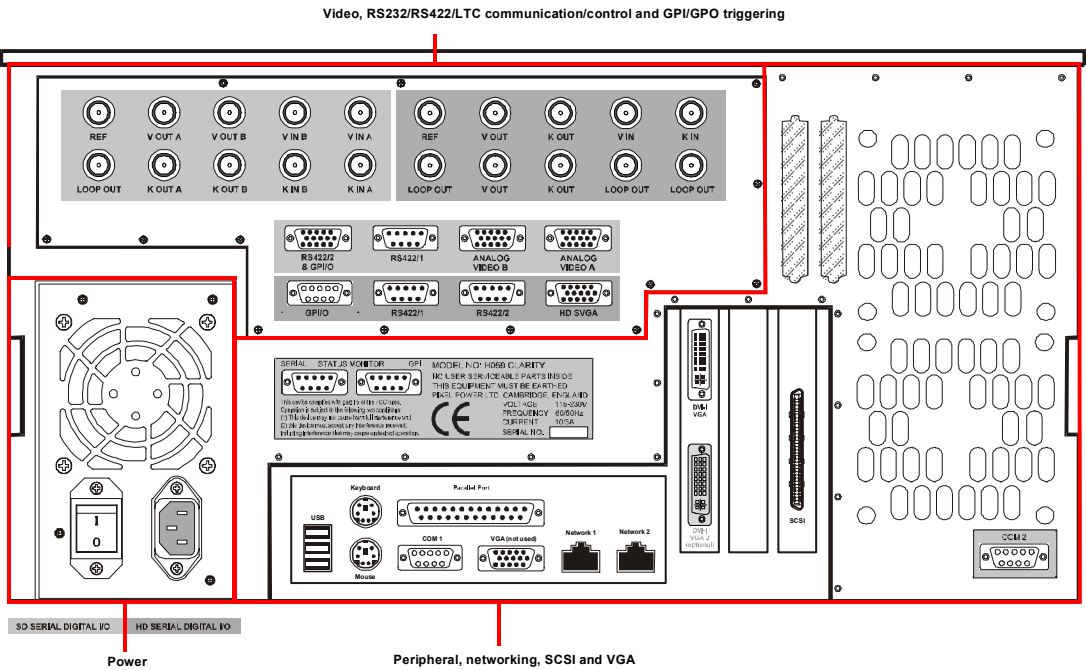


F-79 Clarity 2 STYLE C system unit rear panel [LEGACY]

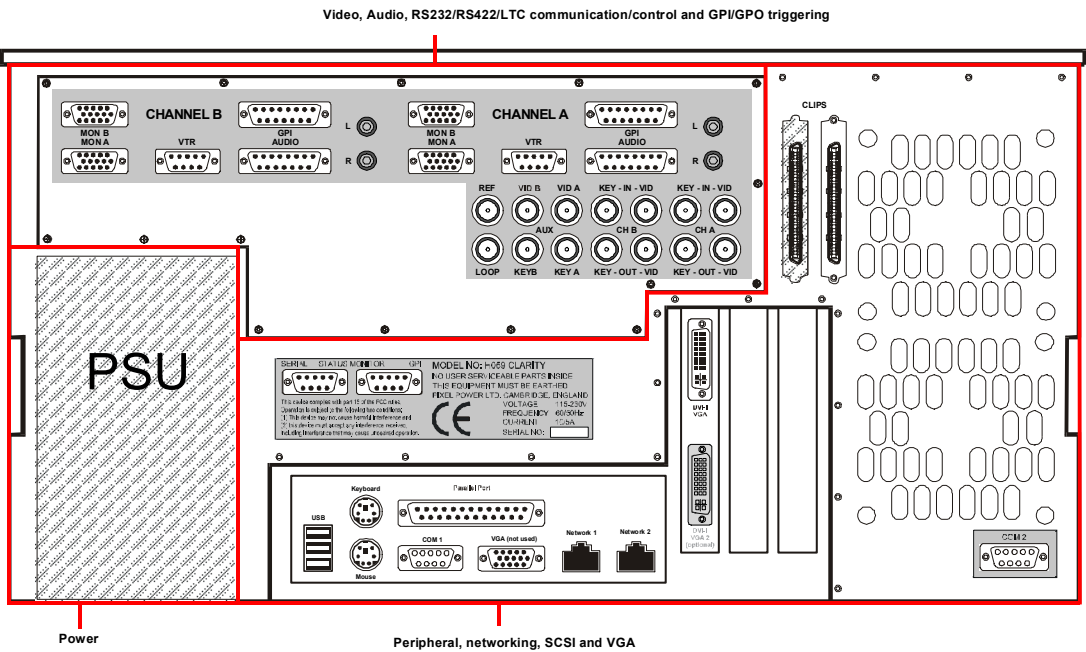


6. Clarity and Clarity PREP PC Installation

F-80 Clarity 2 STYLE D system unit rear panel [LEGACY]



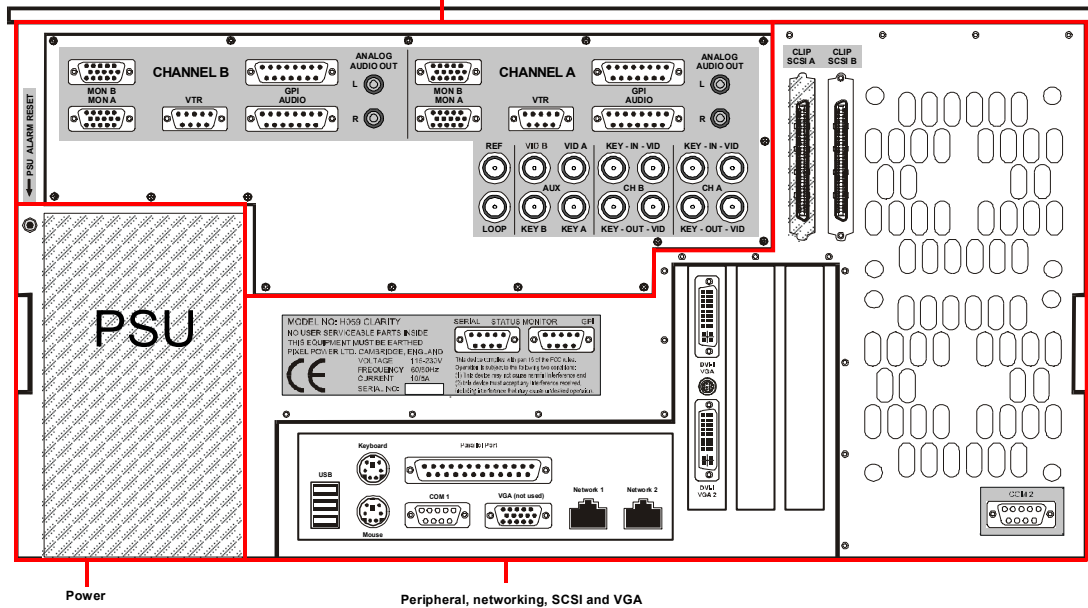
F-81 Clarity 500 STYLE A system unit rear panel [LEGACY]



6. Clarity and Clarity PREP PC Installation

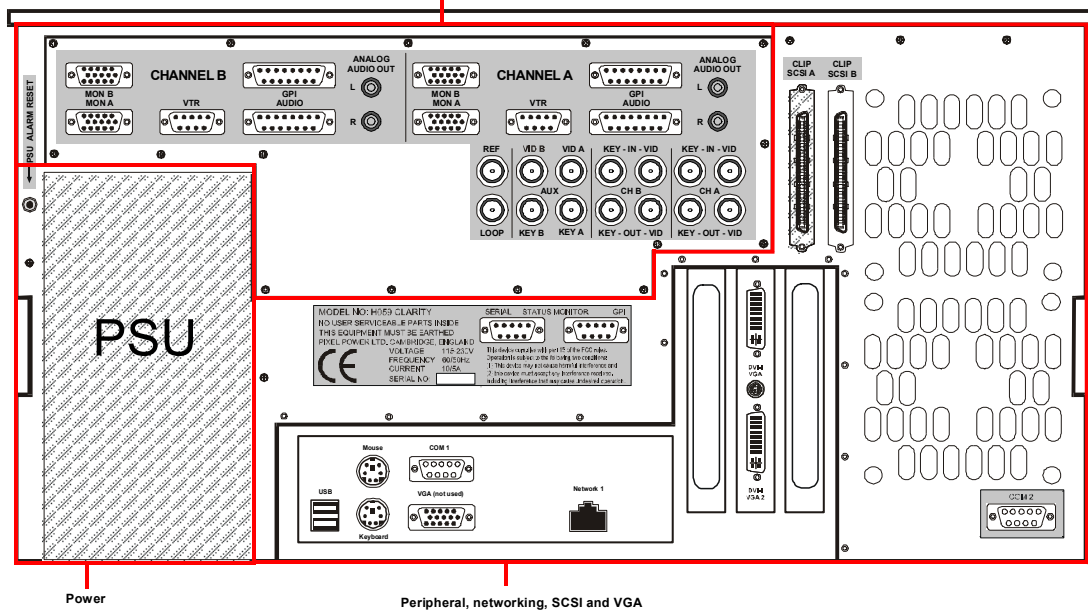
F-82 Clarity 500 STYLE B system unit rear panel [LEGACY]

Video, Audio, RS232/RS422/LTC communication/control and GPI/GPO triggering



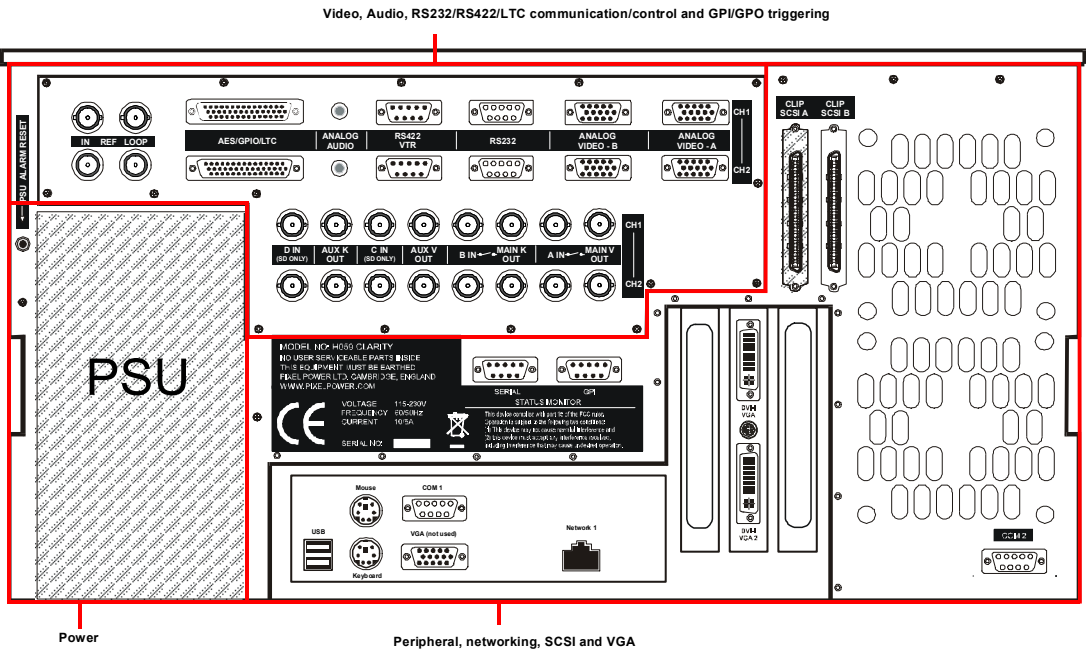
F-83 Clarity 500 STYLE C system unit rear panel (dual channel)

Video, Audio, RS232/RS422/LTC communication/control and GPI/GPO triggering



6. Clarity and Clarity PREP PC Installation

F-84 Clarity 5000 STYLE A system unit rear panel (dual channel)



6. Clarity and Clarity PREP PC Installation

6.1.4.1 Power



Ensure that the mains supply is **OFF** when connecting or disconnecting the power supply to a system unit.

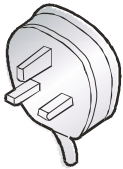
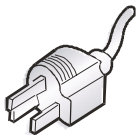
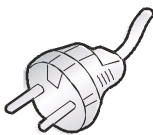
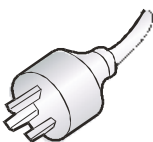


Make sure that the source is suitable.¹

The supplied mains cable shipped with the system unit will match the required type for use in the selected country or region. Refer to “6.1.4.1 Power” on page 6.11 for more information.

6.1.4.1.1 IEC 3-pin mains power socket cable

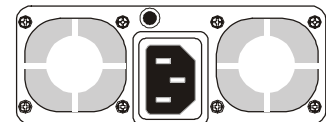
T-60 IEC 3-pin mains power socket cable

| United Kingdom | Standard 120 V, 3-prong. For use with common ground systems in North America. | Universal European | Australian |
|--|--|---|--|
|  |  |  |  |

6.1.4.1.2 Clarity 100 STYLE A non-redundant PSU

To connect the power, follow the steps below:

- Connect the moulded mains lead to the IEC 3-pin power socket on the rear panel.
- Connect the other end of the moulded mains lead to separate redundant mains circuits. Do not turn the unit on until all other connections have been made.

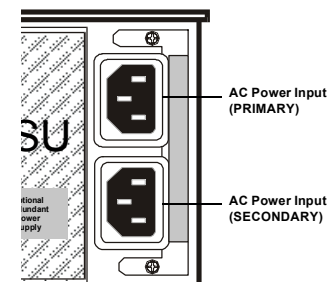


Refer to “5.1.1 Single non-redundant 350W PSU” on page 5.1 for more information.

6.1.4.1.3 Clarity 200 STYLE A dual-redundant PSU cage

To connect the power, follow the steps below:

- Connect the moulded mains lead to the TOP IEC 3-pin power socket on the rear panel. If the optional second module is fitted, connect the second moulded mains lead to the BOTTOM IEC 3-pin power socket on the rear panel.
- Connect the other end of the moulded mains leads to separate redundant mains circuits. Do not turn the unit on until all other connections have been made.



Refer to “5.2.1 Dual-redundant 500W PSU cage” on page 5.3 for more information.

1. (100-230V~50/60Hz).

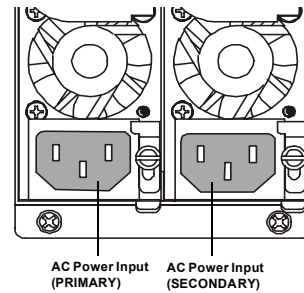
6. Clarity and Clarity PREP PC Installation

6.1.4.1.4 Clarity 300 STYLE A and Clarity 3000 STYLE A dual-redundant PSU cage

To connect the power, follow the steps below:

- Connect the moulded mains lead to the LEFT IEC 3-pin power socket on the rear panel. If the optional second module is fitted, connect the second moulded mains lead to the RIGHT IEC 3-pin power socket on the rear panel.
- Connect the other end of the moulded mains leads to separate redundant mains circuits. Do not turn the unit on until all other connections have been made.

Refer to “5.3.1 Dual-redundant 460W PSU cage” on page 5.8 for more information.

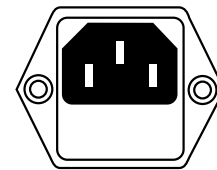


6.1.4.1.5 Clarity STYLE A and Clarity 2 STYLE B system unit power

[LEGACY]

To connect the power, follow the steps below:

- Connect the moulded mains lead to the IEC 3-pin power socket on the rear panel.
- Connect the other end of the moulded mains lead to the mains power supply. Do not turn the unit on until all other connections have been made.

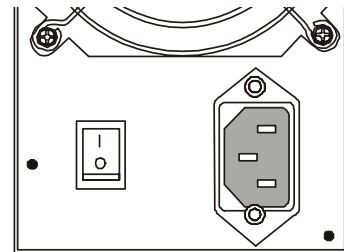


6.1.4.1.6 Clarity 2 STYLE C and Clarity 500 STYLE A and B non-redundant PSU

[LEGACY]

To connect the power, follow the steps below:

- Connect the moulded mains lead to the IEC 3-pin power socket on the rear panel.
- Connect the other end of the moulded mains lead to the mains power supply. Do not turn the unit on until all other connections have been made.

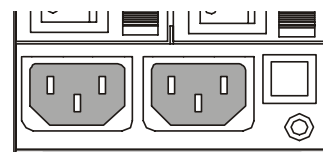


6.1.4.1.7 Clarity 2 STYLE C and Clarity 500 STYLE A dual-redundant PSU

[LEGACY]

To connect the power, follow the steps below:

- Connect both moulded mains leads to both IEC 3-pin power sockets on both PSU modules.
- Connect the other end of the moulded mains leads to separate redundant mains circuits. Do not turn the unit on until all other connections have been made.

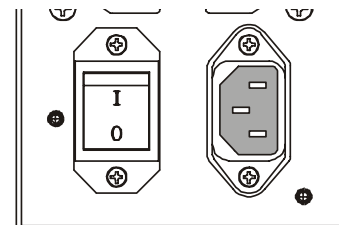


6.1.4.1.8 Clarity 2 STYLE D non-redundant PSU

[LEGACY]

To connect the power, follow the steps below:

- Connect the moulded mains lead to the IEC 3-pin power socket on the rear panel.
- Connect the other end of the moulded mains lead to the mains power supply. Do not turn the unit on until all other connections have been made.

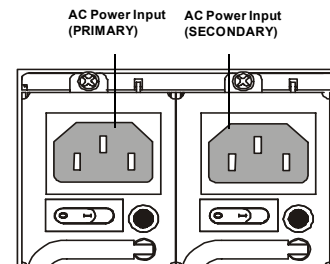


6. Clarity and Clarity PREP PC Installation

6.1.4.1.9 Clarity 500 STYLE B and C and Clarity 5000 STYLE A dual-redundant PSU cage

To connect the power, follow the steps below:

- Connect the moulded mains lead to the LEFT IEC 3-pin power socket on the rear panel. If the optional second module is fitted, connect the second moulded mains lead to the RIGHT IEC 3-pin power socket on the rear panel.
- Connect the other end of the moulded mains leads to separate redundant mains circuits. Do not turn the unit on until all other connections have been made.

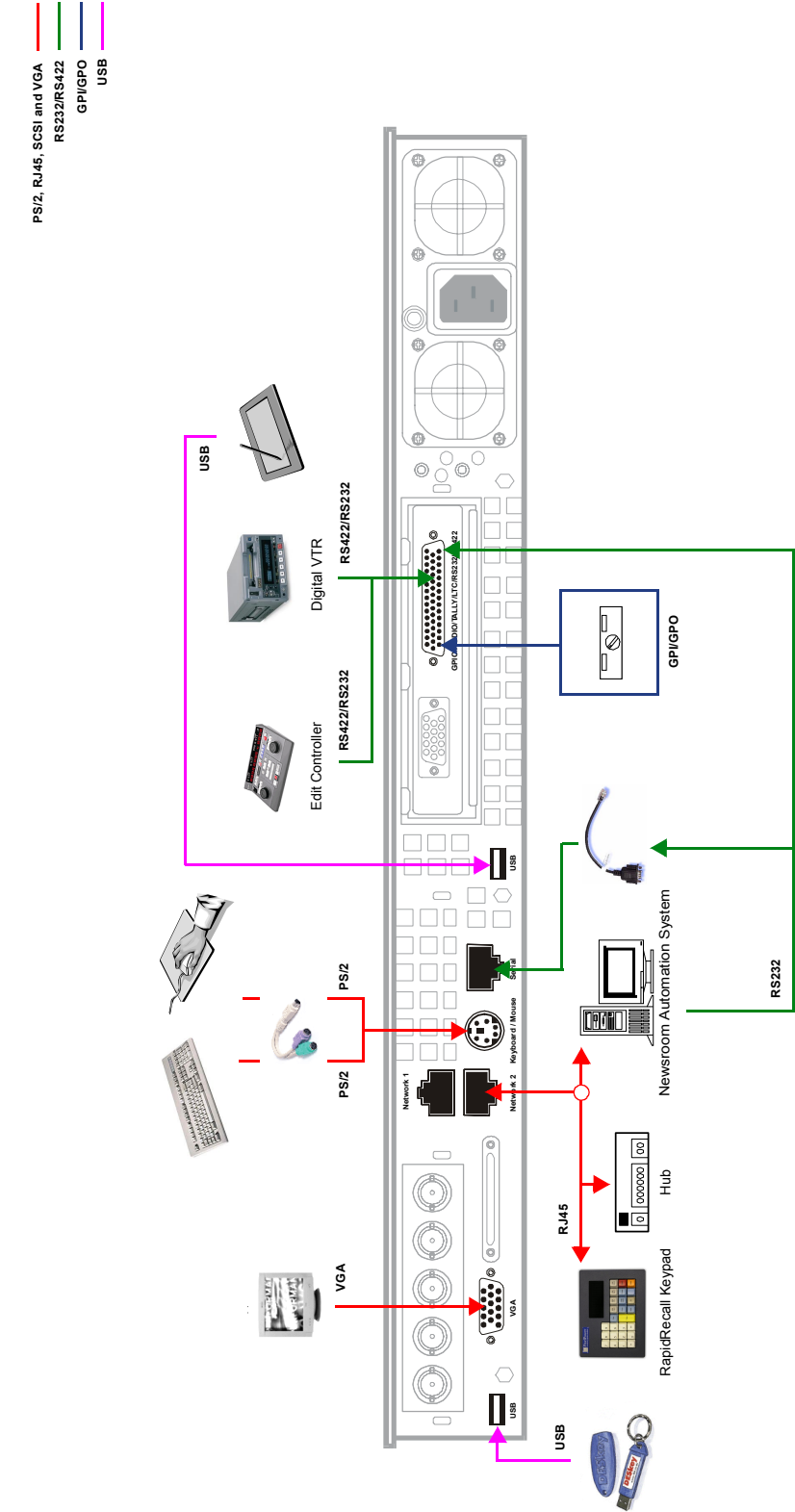


Refer to [“5.6.1 Dual-redundant 500W PSU cage”](#) on page 5.18 for more information.

6.1.4.2 Clarity 100 STYLE A peripherals, networking, RS232/RS422/GPI/GPO

To connect the supplied peripherals and those supplied by you, follow the steps below. Please refer to the diagram below when attempting this section.

F-85 Clarity 100 STYLE A peripheral, networking and RS232/RS422/GPI/GPO



6. Clarity and Clarity PREP PC Installation

Mouse and keyboard

A mouse and UK/US standard PC keyboard are supplied with all Clarity 100 system units. Both of these peripherals are connected to the single PS/2 DIN socket using a breakout cable.

- Plug the breakout cable 6-pin mini-DIN plug into the DIN socket (**Keyboard/Mouse**).
- Plug the PS/2 compatible mouse 6-pin mini-DIN plug into the first female DIN connector. Plug the PC keyboard 6-pin mini-DIN plug into the second female DIN connector.

Graphics tablet

- A graphics tablet is an option to Clarity 100 system units. Plug the male USB plug on the cable connecting the tablet into an available USB port (**USB**).

License dongle

- Plug the supplied Licence Dongle into an available USB port (**USB**). This **MUST** be fitted for the software to operate correctly.

Network

- If you are connecting a Clarity system unit to your Ethernet 10/100 network, do so using either the RJ45 Ethernet 10/100 Network port (**Network 1**) or 100/1000 Network port (**Network 2**). The network ports can also be used to connect newsroom automation systems and RapidRecall keypads.

SVGA display

- Plug the SVGA cable 15-pin male HD D-type plug of your monitor into the 15-pin female HD D-type socket (**VGA**).

Digital VTR or Edit Controller

- Plug the 44-pin male D-type plug on the breakout communication cable connecting the VTR or Edit controller into the 44-pin female D-type socket (**GPIO/AUDIO/TALLY/LTC/RS232/RS422**).

Newsroom automation system or RapidRecall keypad

Either:

- Plug the 44-pin male HD D-type plug on the breakout communication cable connecting the Newsroom automation system into the 44-pin female HD D-type socket (**GPIO/AUDIO/TALLY/LTC/RS232/RS422**).

Or:

- Plug the 9-pin male D-type plug on the cable connecting the Newsroom automation system into the 9-pin female D-type socket on the RJ45 to 9-pin female D-type breakout cable.

The network ports can also be used to connect newsroom automation systems and RapidRecall keypads.

GPI/GPO switching

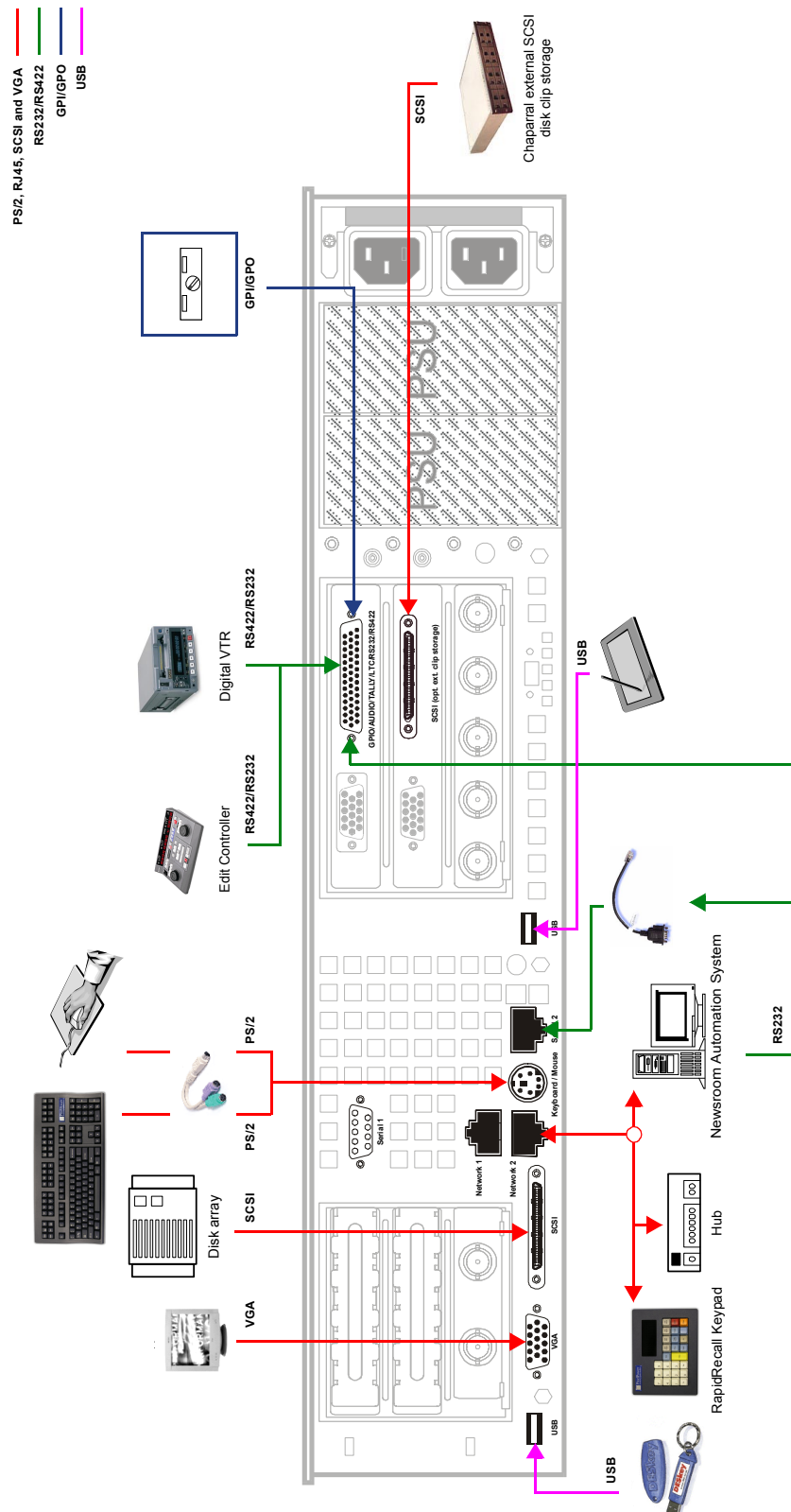
- Plug the 44-pin male HD D-type plug on the breakout communication cable connecting the GPI/GPO switching device into the 44-pin female HD D-type socket (**GPIO/AUDIO/TALLY/LTC/RS232/RS422**).

6. Clarity and Clarity PREP PC Installation

6.1.4.3 Clarity 200 STYLE A peripherals, networking, RS232/RS422/GPI/GPO

To connect the supplied peripherals and those supplied by you, follow the steps below. Please refer to the diagram below when attempting this section.

F-86 Clarity 200 STYLE A peripheral, networking and RS232/RS422/GPI/GPO



6. Clarity and Clarity PREP PC Installation

Mouse and RapidAction keyboard

A mouse and RapidAction keyboard are supplied with all Clarity 200 system units. Both of these peripherals are connected to the single PS/2 DIN socket using a breakout cable.

- Plug the breakout cable 6-pin mini-DIN plug into the DIN socket (**Keyboard/Mouse**).
- Plug the PS/2 compatible mouse 6-pin mini-DIN plug into the first female DIN connector. Plug the RapidAction keyboard 6-pin mini-DIN plug into the second female DIN connector.

Graphics tablet

- A graphics tablet is an option to Clarity 200 system units. Plug the male USB plug on the cable connecting the tablet into an available USB port (**USB**).

License dongle

- Plug the supplied Licence Dongle into an available USB port (**USB**). This **MUST** be fitted for the software to operate correctly.

Network

- If you are connecting a Clarity system unit to your Ethernet 10/100 network, do so using either the RJ45 Ethernet 10/100 Network port (**Network 1**) or 100/1000 Network port (**Network 2**). The network ports can also be used to connect newsroom automation systems and RapidRecall keypads.

SVGA display

- Plug the SVGA cable 15-pin male HD D-type plug of your monitor into the 15-pin female HD D-type socket (**VGA**).

Disk Array

- For increased external storage connect a suitable SCSI disk array to the 68-pin female VHDCI SCSI ULTRA 320 connector (**SCSI**).

Chaparral external SCSI disk clip storage

- If your system unit features the optional video/audio clip option, plug in the 68-pin male VHDCI plug on the SCSI ULTRA 320 cable into the 68-pin female VHDCI SCSI ULTRA 320 connector (**SCSI (opt. ext. clip storage)**). Plug the other end (68-pin male VHDCI) into the external clip store (Chaparral).

Digital VTR or Edit Controller

- Plug the 44-pin male HD D-type plug on the breakout communication cable connecting the VTR or Edit controller into the 44-pin female HD D-type socket (**GPIO/AUDIO/TALLY/LTC/RS232/RS422**).

Newsroom automation system or RapidRecall keypad

Either:

- Plug the 44-pin male HD D-type plug on the breakout communication cable connecting the Newsroom automation system into the 44-pin female HD D-type socket (**GPIO/AUDIO/TALLY/LTC/RS232/RS422**).

Or:

- Plug the 9-pin male D-type plug on the cable connecting the Newsroom automation system into the 9-pin female D-type socket on the RJ45 to 9-pin female D-type breakout cable.

The network ports can also be used to connect newsroom automation systems and RapidRecall keypads.

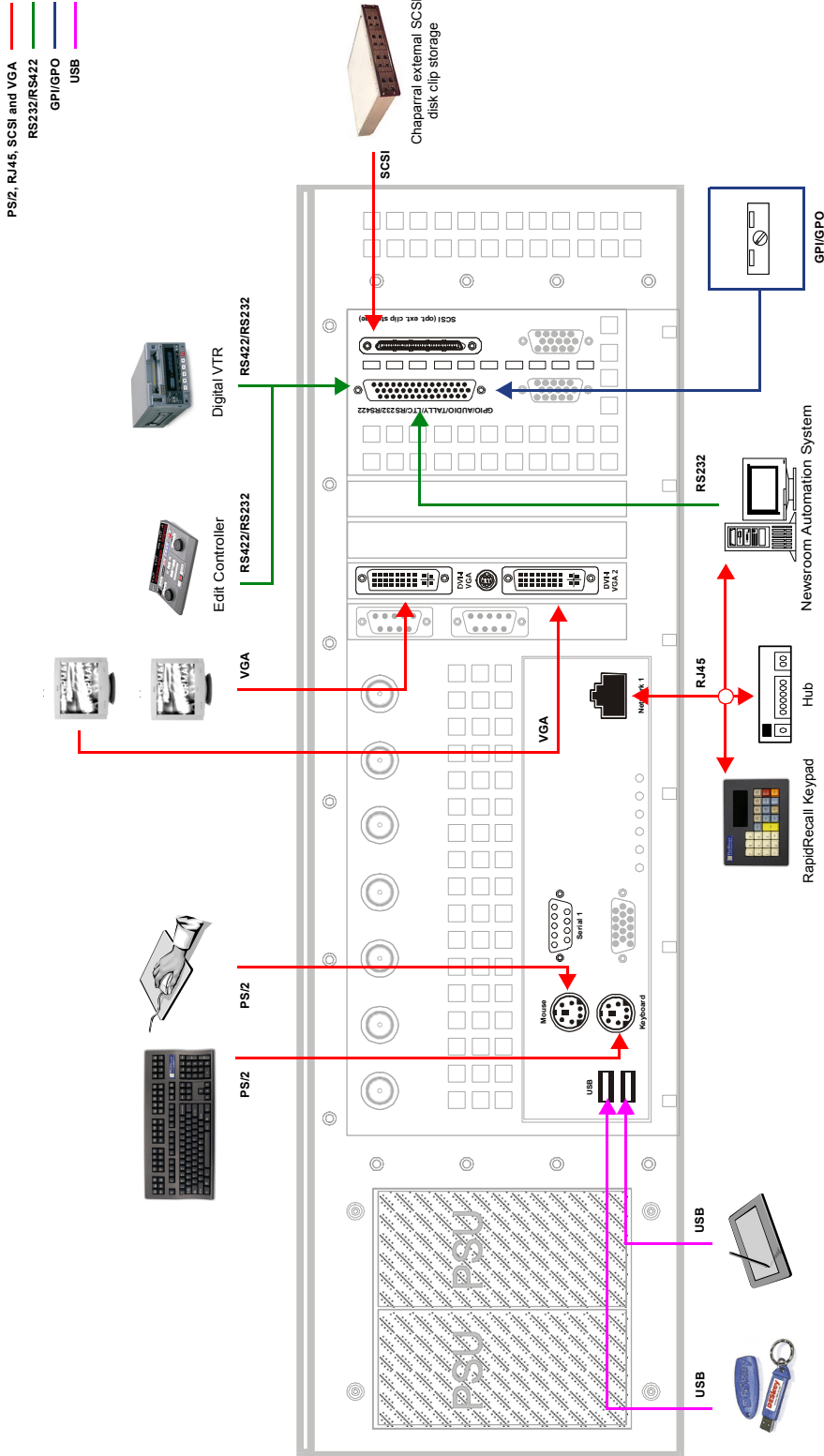
GPI/GPO switching

- Plug the 44-pin male D-type plug on the breakout communication cable connecting the GPI/GPO switching device into the 44-pin female D-type socket (**GPIO/AUDIO/TALLY/LTC/RS232/RS422**).

6.1.4.4 Clarity 300 STYLE A peripherals, networking, RS232/RS422/GPI/GPO

To connect the supplied peripherals and those supplied by you, follow the steps below. Please refer to the diagram below when attempting this section.

F-87 Clarity 300 STYLE A peripheral, networking and RS232/RS422/GPI/GPO



6. Clarity and Clarity PREP PC Installation

Mouse and RapidAction keyboard

- A mouse and RapidAction keyboard are supplied with all Clarity 300 system units. Plug the PS/2 compatible mouse 6-pin mini-DIN plug into the top DIN socket (**Mouse**). Plug the RapidAction keyboard 6-pin mini-DIN plug into the bottom DIN socket (**Keyboard**).

Graphics tablet

- A graphics tablet is an option to Clarity 300 system units. Plug the male USB plug on the cable connecting the tablet into an available USB port (**USB**).

License dongle

- Plug the supplied Licence Dongle into an available USB port (**USB**). This MUST be fitted for the software to operate correctly.

Network

- If you are connecting a Clarity system unit to your Ethernet 10/100 network, do so using the RJ45 Ethernet 10/100/1000 Network port (**Network 1**). The network port can also be used to connect newsroom automation systems and RapidRecall keypads.

SVGA display

- Plug the video cable 24-pin male DVI-I plug of your monitor into the 24-pin female DVI-I output socket (**DVI-I VGA 1**).

24-pin female DVI-I output (provides both ANALOG and DIGITAL video signals). You may require a DVI male to 15-pin VGA adapter for connection to your output display device. The graphics card fitted to your Clarity system unit may feature a second 24-pin female DVI-I output socket (**DVI-I VGA 2**).

Chaparral external SCSI disk clip storage

- If your system unit features the optional video/audio clip option, plug in the 68-pin male VHDCI plug on the SCSI ULTRA 320 cable into the 68-pin female VHDCI SCSI ULTRA 320 connector (**SCSI (opt. ext. clip storage)**). Plug the other end (68-pin male VHDCI) into the external clip store (Chaparral).

Digital VTR or Edit Controller

- Plug the 44-pin male HD D-type plug on the breakout communication cable connecting the VTR or Edit controller into the 44-pin female HD D-type socket (**GPIO/AUDIO/TALLY/LTC/RS232/RS422**).

Newsroom automation system or RapidRecall keypad

Either:

- Plug the 44-pin male HD D-type plug on the breakout communication cable connecting the Newsroom automation system or RapidRecall keypad into the 44-pin female HD D-type socket (**GPIO/AUDIO/TALLY/LTC/RS232/RS422**).

Or:

- Plug the 9-pin female D-type plug on the serial communication cable connecting the Newsroom automation system into the 9-pin male D-type socket (**SERIAL 1**).

The network ports can also be used to connect newsroom automation systems and RapidRecall keypads.

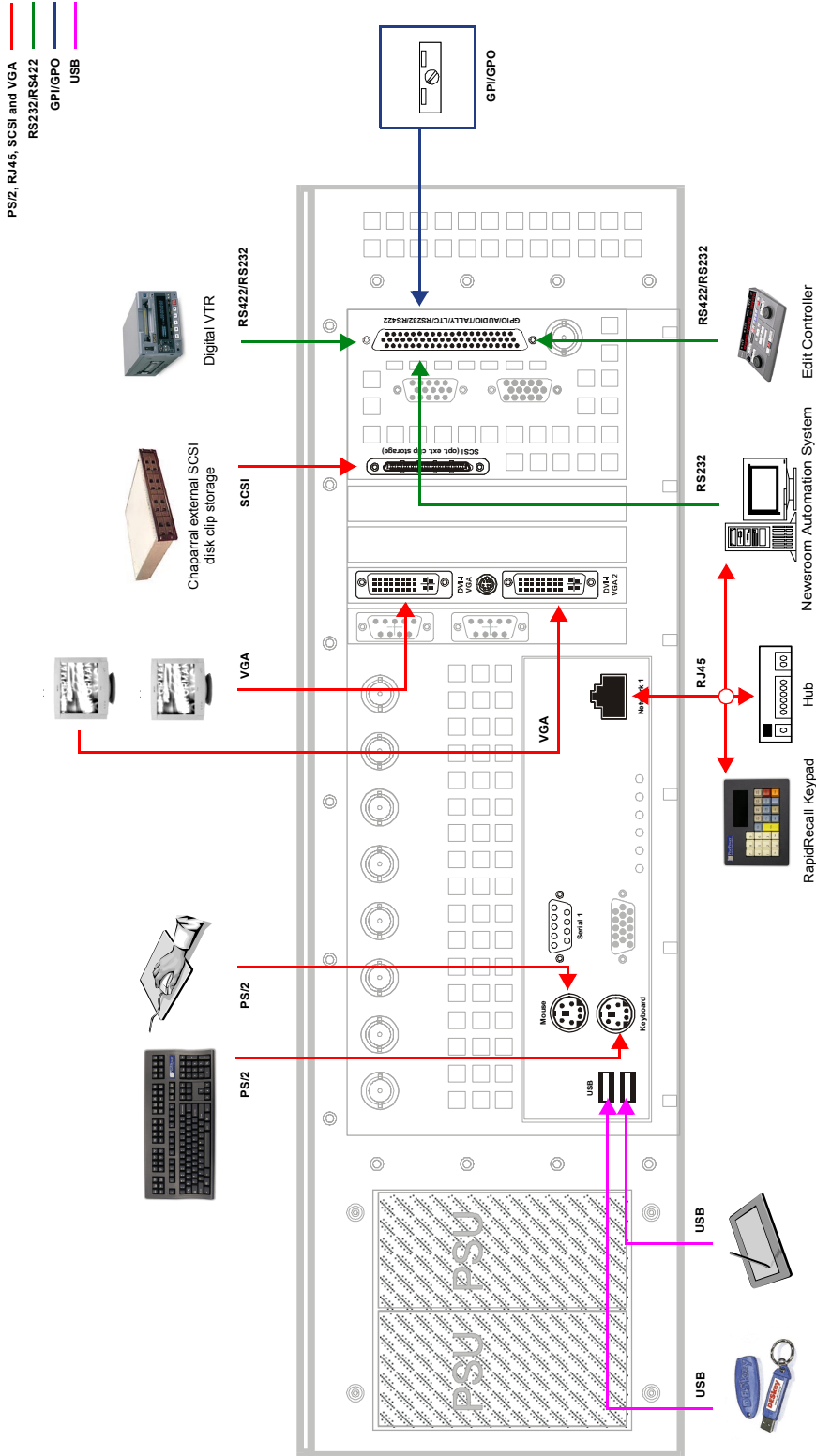
GPI/GPO switching

- Plug the 44-pin male D-type plug on the breakout communication cable connecting the GPI/GPO switching device into the 44-pin female D-type socket (**GPIO/AUDIO/TALLY/LTC/RS232/RS422**).

6.1.4.5 Clarity 3000 STYLE A peripherals, networking, RS232/RS422/GPI/GPO

To connect the supplied peripherals and those supplied by you, follow the steps below. Please refer to the diagram below when attempting this section.

F-88 Clarity 3000 STYLE A peripheral, networking and RS232/RS422/GPI/GPO



6. Clarity and Clarity PREP PC Installation

Mouse and RapidAction keyboard

- A mouse and RapidAction keyboard are supplied with all Clarity 3000 system units. Plug the PS/2 compatible mouse 6-pin mini-DIN plug into the top DIN socket (**Mouse**). Plug the RapidAction keyboard 6-pin mini-DIN plug into the bottom DIN socket (**Keyboard**).

Graphics tablet

- A graphics tablet is an option to Clarity 3000 system units. Plug the male USB plug on the cable connecting the tablet into an available USB port (**USB**).

License dongle

- Plug the supplied Licence Dongle into an available USB port (**USB**). This MUST be fitted for the software to operate correctly.

Network

- If you are connecting a Clarity system unit to your Ethernet 10/100 network, do so using the RJ45 Ethernet 10/100/1000 Network port (**Network 1**). The network port can also be used to connect newsroom automation systems and RapidRecall keypads.

SVGA display

- Plug the video cable 24-pin male DVI-I plug of your monitor into the 24-pin female DVI-I output socket (**DVI-I VGA 1**).

24-pin female DVI-I output (provides both ANALOG and DIGITAL video signals). You may require a DVI male to 15-pin VGA adapter for connection to your output display device. The graphics card fitted to your Clarity system unit may feature a second 24-pin female DVI-I output socket (**DVI-I VGA 2**).

Chaparral external SCSI disk clip storage

- If your system unit features the optional video/audio clip option, plug in the 68-pin male VHDCI plug on the SCSI ULTRA 320 cable into the 68-pin female VHDCI SCSI ULTRA 320 connector (**SCSI (opt. ext. clip storage)**). Plug the other end (68-pin male VHDCI) into the external clip store (Chaparral).

Digital VTR or Edit Controller

- Plug the 62-pin male HD D-type plug on the breakout communication cable connecting the VTR or Edit controller into the 62-pin female HD D-type socket (**GPIO/AUDIO/TALLY/LTC/RS232/RS422**).

Newsroom automation system or RapidRecall keypad

Either:

- Plug the 62-pin male HD D-type plug on the breakout communication cable connecting the Newsroom automation system or RapidRecall keypad into the 62-pin female HD D-type socket (**GPIO/AUDIO/TALLY/LTC/RS232/RS422**).

Or:

- Plug the 9-pin female D-type plug on the serial communication cable connecting the Newsroom automation system into the 9-pin male D-type socket (**SERIAL 1**).

The network ports can also be used to connect newsroom automation systems and RapidRecall keypads.

GPI/GPO switching

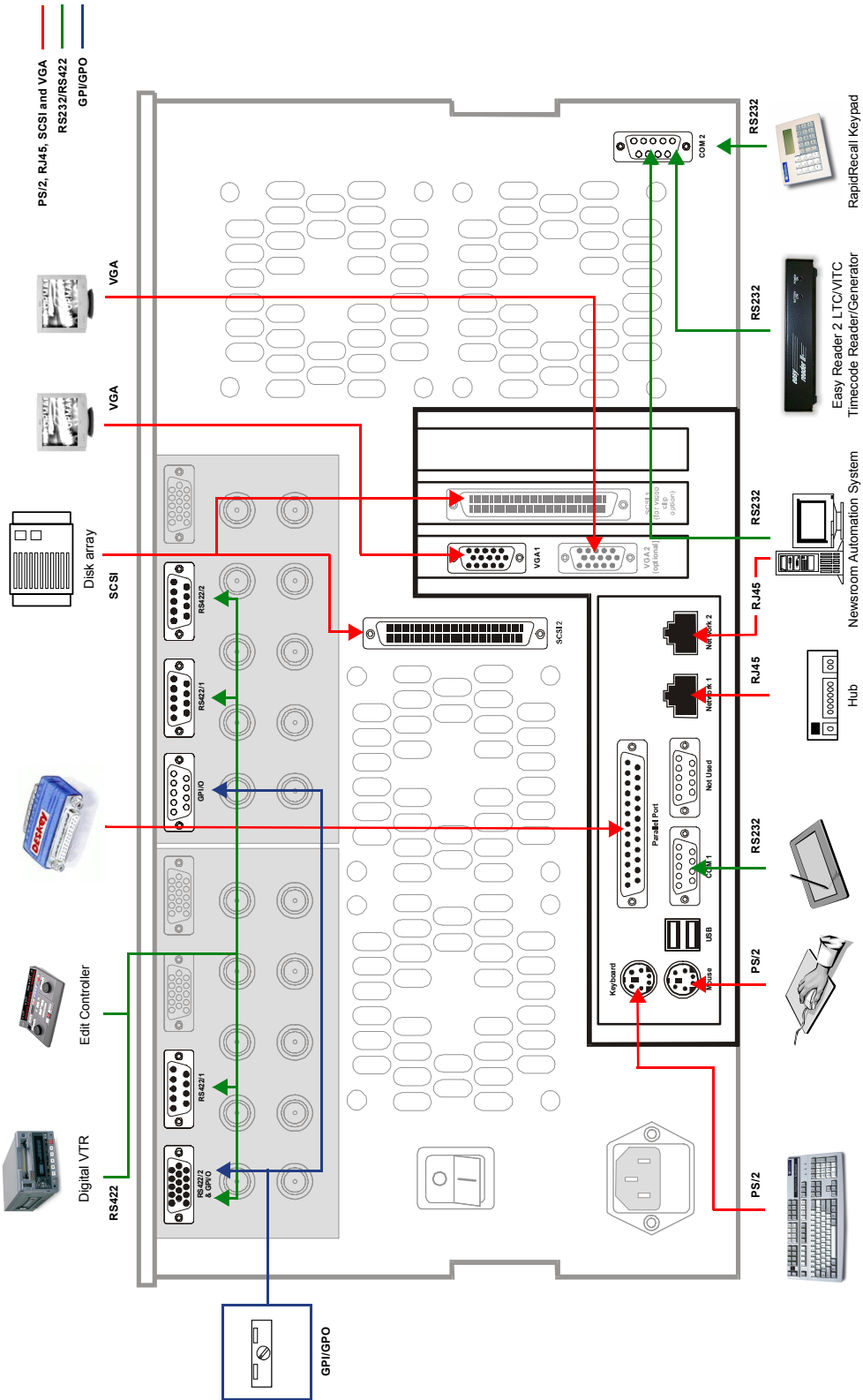
- Plug the 62-pin male D-type plug on the breakout communication cable connecting the GPI/GPO switching device into the 62-pin female D-type socket (**GPIO/AUDIO/TALLY/LTC/RS232/RS422**).

[LEGACY]

6.1.4.6 Clarity STYLE A peripherals, networking and RS232/RS422/GPI/GPO

To connect the supplied peripherals and those supplied by you, follow the steps below. Please refer to the diagram below when attempting this section.

F-89 Clarity STYLE A peripheral, networking and RS232/RS422/GPI/GPO [LEGACY]



Mouse and RapidAction keyboard

A mouse is supplied instead of a graphics tablet for TG and CG system units.

- Plug the PS/2 compatible mouse 6-pin mini-DIN plug into the bottom DIN socket (**Mouse**).
- Plug the RapidAction keyboard 6-pin mini-DIN plug into the top DIN socket (**Keyboard**).

Graphics tablet

A graphics tablet is supplied with GX system units and as an option to TG and CG system units.



Check that the supply voltage specified on the tablet or power supply matches the local mains supply voltage.

- Plug the 9-pin female D-type plug from the tablet into the 9-pin male D-type socket (**COM 1**) using the 9-pin lead supplied with the tablet.
- Connect the tablet's power supply cable into the back of the 9-pin female D-type plug, as shown in the manufacturers instructions.

License dongle

- Plug the supplied Licence Dongle into the 25-pin Parallel Port (**Parallel Port**). This **MUST** be fitted for the software to operate correctly.

Network

- If you are connecting a Clarity system unit to your Ethernet 10/100 network, do so using the RJ45 Ethernet 10/100 Network ports (**Network 1** or **Network 2**). The network ports can also be used for communication via DCOM to a newsroom automation system.

SVGA display

- Plug in the SVGA cable 15-pin male HD D-type plug of your monitor into the 15-pin female HD D-type socket (**VGA 1**).

The graphics card fitted to your Clarity system unit may feature a second 15-pin female HD D-type socket (**VGA 2**). This enables dual monitor support.

SCSI termination

- Connect the supplied SCSI Terminator to the 68-Pin female HD D-type ULTRA SCSI 160 connector (**SCSI 1**). This **MUST** be fitted.

For more information on the connection of peripherals to the **SCSI 1** and **SCSI 2** (if fitted) ports (e.g. external hard disk drives etc.), please refer to the supplied Adaptec documentation for more information.

Digital HD VTR or Edit Controller

- Plug in the 9-pin (RS422/1) male D-type plug or 15-pin (RS422/2) male HD D-type plug on the communication cable connecting the VTR or Edit controller into the 9-pin female D-type socket (**RS422/1**) or 15-pin (**RS422/2**) female HD D-type socket.

Newsroom automation system, Easy Reader 2 or RapidRecall keypad

- Plug in the 9-pin female D-type plug on the serial communication cable connecting the Newsroom automation system, Easy Reader 2 or RapidRecall keypad into the 9-pin male D-type socket (**COM 2**).

GPI/GPO switching

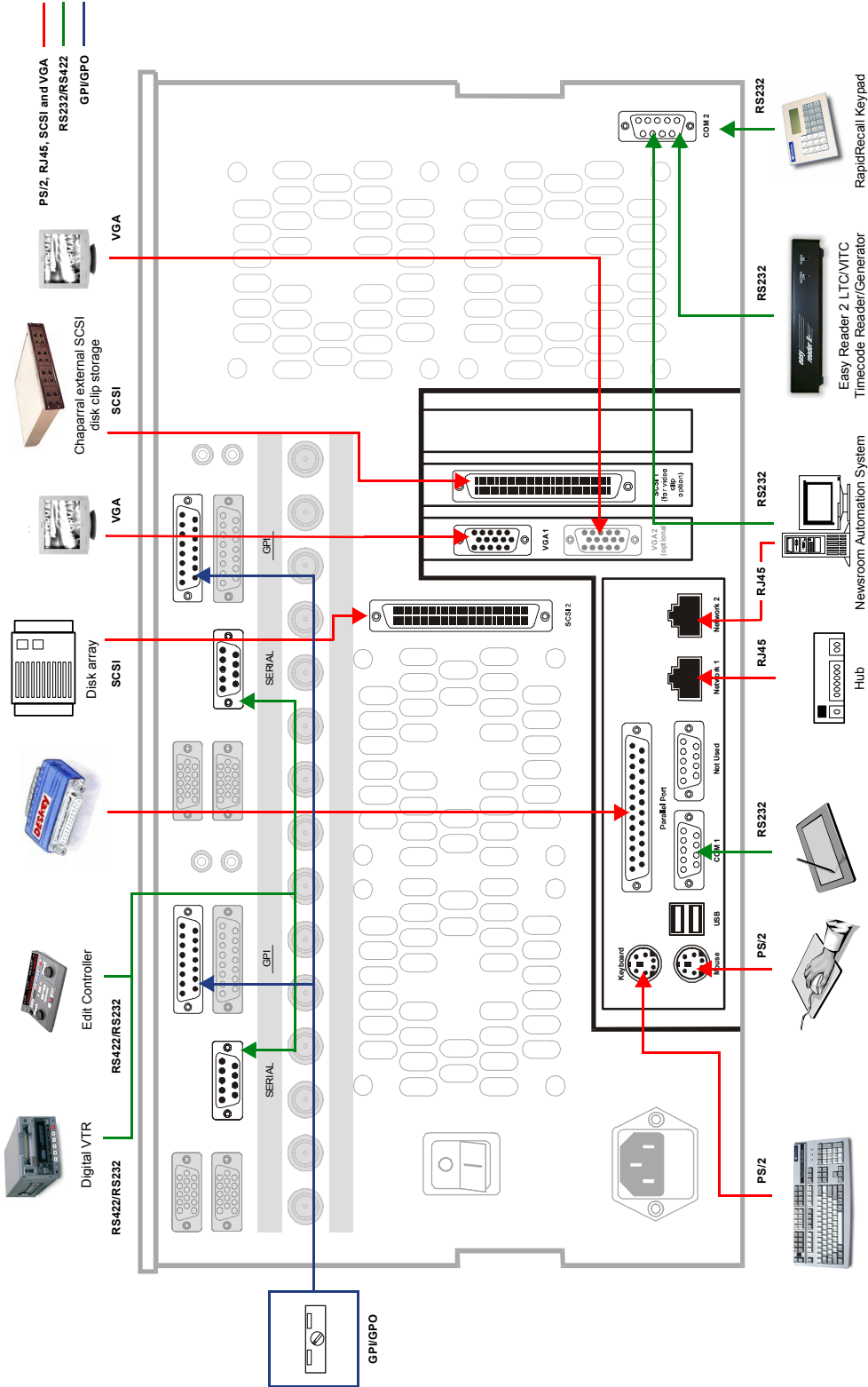
- Plug in the 15-pin (RS422/1 & GPI/O) male HD D-type plug or 9-pin (GPI/O) female D-type plug on the communication cable connecting the GPI/GPO switching device into the 15-pin (**RS422/1 & GPI/O**) female HD D-type socket or 9-pin male D-type socket (**GPI/O**).

[LEGACY]

6.1.4.7 Clarity 2 STYLE B peripherals, networking and RS232/RS422/GPI/GPO

To connect the supplied peripherals and those supplied by you, follow the steps below. Please refer to the diagram below when attempting this section.

F-90 Clarity 2 STYLE B peripheral, networking and RS232/RS422/GPI/GPO [LEGACY]



Mouse and RapidAction keyboard

A mouse is supplied instead of a graphics tablet for TG and CG system units.

- Plug the PS/2 compatible mouse 6-pin mini-DIN plug into the bottom DIN socket (**Mouse**).
- Plug the RapidAction keyboard 6-pin mini-DIN plug into the top DIN socket (**Keyboard**).

Graphics tablet

A graphics tablet is supplied with GX system units and as an option to TG and CG system units.



Check that the supply voltage specified on the tablet or power supply matches the local mains supply voltage.

- Plug the 9-pin female D-type plug from the tablet into the 9-pin male D-type socket (**COM 1**) using the 9-pin lead supplied with the tablet.
- Connect the tablet's power supply cable into the back of the 9-pin female D-type plug, as shown in the manufacturers instructions.

License dongle

- Plug the supplied Licence Dongle into the 25-pin Parallel Port (**Parallel Port**). This **MUST** be fitted for the software to operate correctly.

Network

- If you are connecting a Clarity system unit to your Ethernet 10/100 network, do so using the RJ45 Ethernet 10/100 Network ports (**Network 1** or **Network 2**).

The network ports can also be used for communication via DCOM to a newsroom automation system.

SVGA display

- Plug in the SVGA cable 15-pin male HD D-type plug of your monitor into the 15-pin female HD D-type socket (**VGA 1**).

The graphics card fitted to your Clarity system unit may feature a second 15-pin female HD D-type socket (**VGA 2**). This enables dual monitor support.

Chaparral external SCSI disk clip storage

- If your system unit features the optional video/audio clip option, plug in the 68-pin male HD D-type plug on the SCSI ULTRA 160 cable into an available 68-pin female HD D-type SCSI ULTRA 160 connector (**Clips**).

Plug the other end (68-pin male VHDCI) into the external clip store (Chaparral).

SCSI Termination or Disk Array

- Connect the supplied SCSI Terminator to the 68-pin female HD D-type SCSI ULTRA 160 connector (**SCSI 2**). This **MUST** be fitted.

For more information on the connection of peripherals to the **SCSI 2** port (e.g. external hard disk drives etc.), please refer to the supplied Adaptec documentation for more information.

Digital VTR or Edit Controller

- Plug in the 9-pin male D-type plug on the communication cable connecting the VTR or Edit controller into the 9-pin female D-type socket (**Serial**).

This 9-pin male D-type socket is configurable between RS422 and RS232 operation. Refer to [“21.9.1](#)

6. Clarity and Clarity PREP PC Installation

[H087/H097 RS422/RS232 jumper configuration”](#) on page 21.31 for more information.

Newsroom automation system, Easy Reader 2 or RapidRecall keypad

- Plug in the 9-pin female D-type plug on the serial communication cable connecting the Newsroom automation system, Easy Reader 2 or RapidRecall keypad into the 9-pin male D-type socket (**COM 2**).

GPI/GPO switching

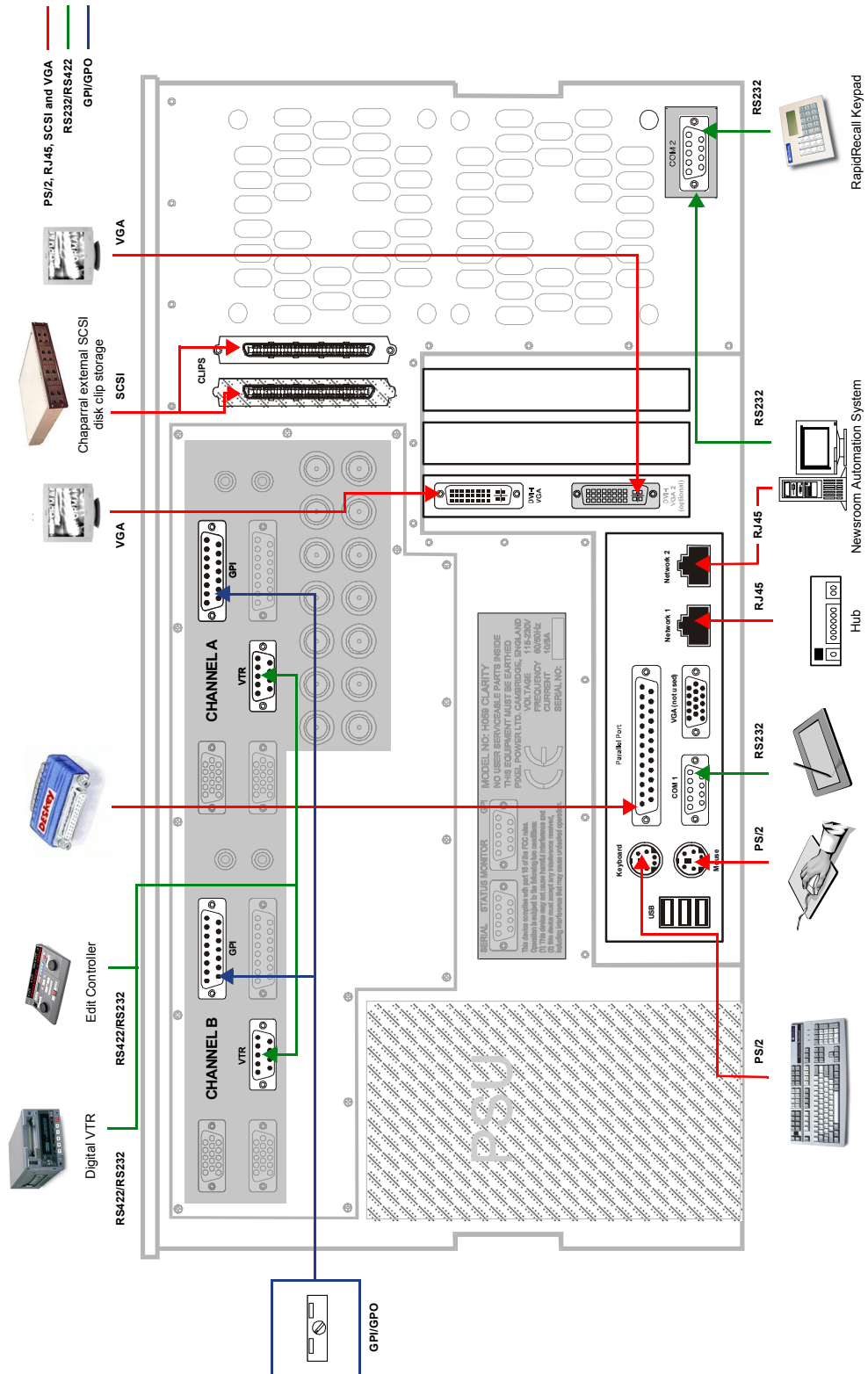
- Plug in the 15-pin male D-type plug on the communication cable connecting the GPI/GPO switching device into the 15-pin female D-type socket (**GPI**).

6.1.4.8 Clarity 2 STYLE C peripherals, networking and RS232/RS422/GPI/GPO

[LEGACY]

To connect the supplied peripherals and those supplied by you, follow the steps below. Please refer to the diagram below when attempting this section.

F-91 Clarity 2 STYLE C peripheral, networking and RS232/RS422/GPI/GPO [LEGACY]



6. Clarity and Clarity PREP PC Installation

Mouse and RapidAction keyboard

A mouse is supplied instead of a graphics tablet for TG and CG system units.

- Plug the PS/2 compatible mouse 6-pin mini-DIN plug into the bottom DIN socket (**Mouse**).
- Plug the RapidAction keyboard 6-pin mini-DIN plug into the top DIN socket (**Keyboard**).

Graphics tablet

A graphics tablet is supplied with GX system units and as an option to TG and CG system units.



Check that the supply voltage specified on the tablet or power supply matches the local mains supply voltage.

- Plug the 9-pin female D-type plug from the tablet into the 9-pin male D-type socket (**COM 1**) using the 9-pin lead supplied with the tablet.
- Connect the tablet's power supply cable into the back of the 9-pin female D-type plug, as shown in the manufacturers instructions.

License dongle

- Plug the supplied Licence Dongle into the 25-pin Parallel Port (**Parallel Port**). This **MUST** be fitted for the software to operate correctly.

Network

- If you are connecting a Clarity system unit to your Ethernet 10/100 network, do so using the RJ45 Ethernet 10/100 Network ports (**Network 1** or **Network 2**).

System units may optionally feature a 1000 base T Ethernet RJ45 interface (Gigabit) via the second RJ45 socket (**NETWORK 2**).

The network ports can also be used for communication via DCOM to a newsroom automation system.

SVGA display

- Plug in the video cable 24-pin male DVI-I plug of your monitor into the 24-pin female DVI-I output socket (**DVI-I VGA 1**).

24-pin female DVI-I output (provides both ANALOG and DIGITAL video signals). You may require a DVI male to 15-pin VGA adapter for connection to your output display device.

The graphics card fitted to your Clarity system unit may feature a second 24-pin female DVI-I output socket (**DVI-I VGA 2**). This enables dual monitor support.

Chaparral external SCSI disk clip storage

- If your system unit features the optional video/audio clip option, plug in the 68-pin male HD D-type plug on the SCSI ULTRA 320 cable into an available 68-pin female HD D-type ULTRA SCSI 320 connector (**Clips**).

Plug the other end (68-pin male VHDCI) into the external clip store (Chaparral).

If your system unit features the optional internal clip storage, then only the right-hand 68-pin female HD D-type connector will be available for the external clip storage; the left-hand socket will be blanked as this SCSI ULTRA 320 bus is used by the internal clip store.

Digital VTR or Edit Controller

- Plug in the 9-pin male D-type plug on the communication cable connecting the VTR or Edit controller into the 9-pin female D-type socket (**VTR**).

6. Clarity and Clarity PREP PC Installation

This 9-pin male D-type socket is configurable between RS422 and RS232 operation. Refer to [“21.9.1 H087/H097 RS422/RS232 jumper configuration”](#) on page 21.31 for more information.

Newsroom automation system or RapidRecall keypad

- Plug in the 9-pin female D-type plug on the serial communication cable connecting the Newsroom automation system or RapidRecall keypad into the 9-pin male D-type socket (**COM 2**).

GPI/GPO switching

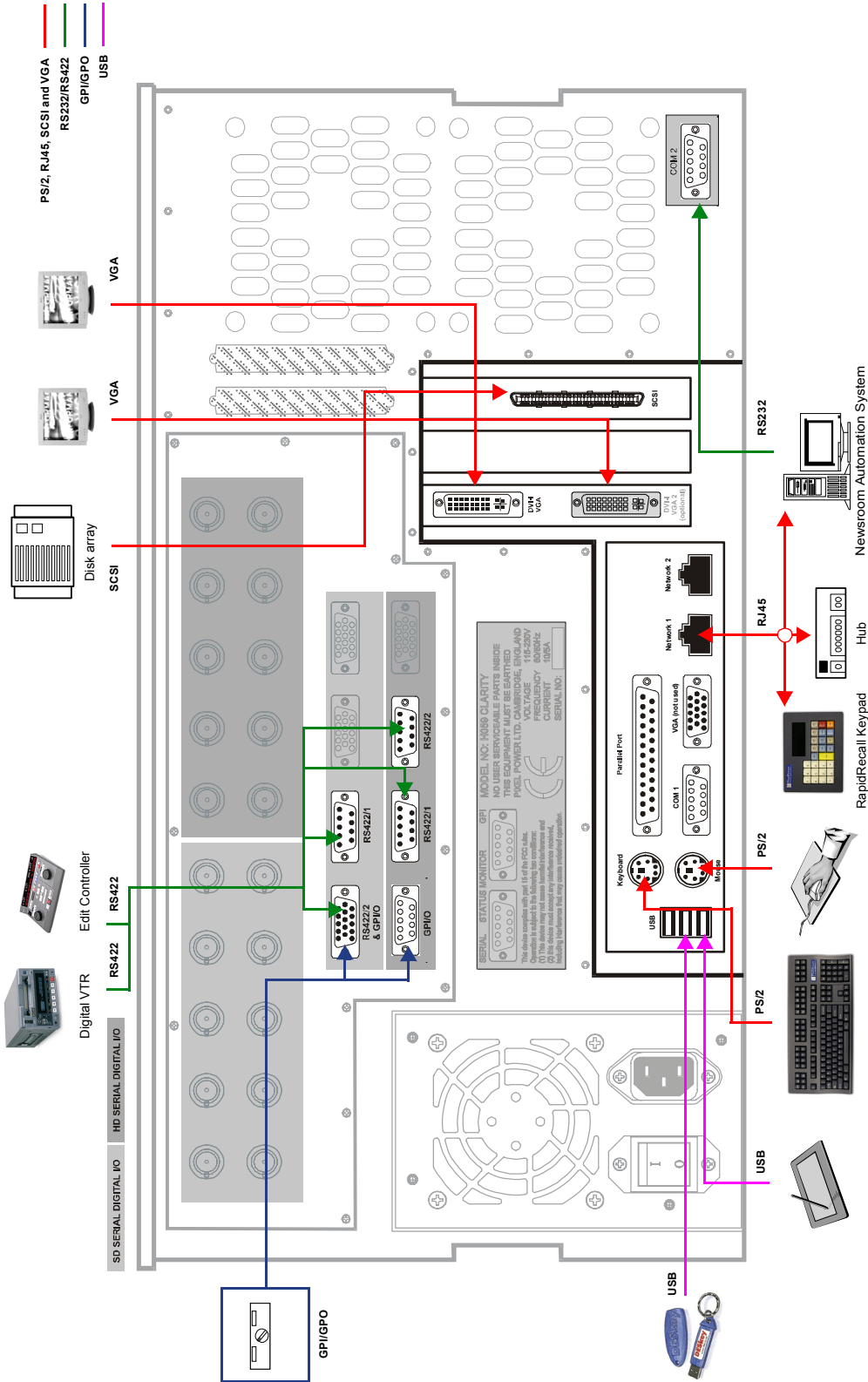
- Plug in the 15-pin male D-type plug on the communication cable connecting the GPI/GPO switching device into the 15-pin female D-type socket (**GPI**).

[LEGACY]

6.1.4.9 Clarity 2 STYLE D peripherals, networking and RS232/RS422/GPI/GPO

To connect the supplied peripherals and those supplied by you, follow the steps below. Please refer to the diagram below when attempting this section.

F-92 Clarity 2 STYLE D peripheral, networking and RS232/RS422/GPI/GPO [LEGACY]



6. Clarity and Clarity PREP PC Installation

Mouse and RapidAction keyboard

- A mouse and RapidAction keyboard are supplied with all Clarity 2 system units. Plug the PS/2 compatible mouse 6-pin mini-DIN plug into the bottom DIN socket (**Mouse**). Plug the RapidAction keyboard 6-pin mini-DIN plug into the top DIN socket (**Keyboard**).

Graphics tablet

- A graphics tablet is an option to Clarity 2 system units. Plug the male USB plug on the cable connecting the tablet into an available USB port (**USB**).

License dongle

- Plug the supplied Licence Dongle into an available USB port (**USB**). This **MUST** be fitted for the software to operate correctly.

Network

- If you are connecting a Clarity system unit to your Ethernet 10/100 network, do so using the RJ45 Ethernet 10/100 Network ports (**Network 1** or **Network 2**). The network ports can also be used to connect newsroom automation systems and RapidRecall keypads.

SVGA display

- Plug the video cable 24-pin male DVI-I plug of your monitor into the 24-pin female DVI-I output socket (**DVI-I VGA 1**).

24-pin female DVI-I output (provides both ANALOG and DIGITAL video signals). You may require a DVI male to 15-pin VGA adapter for connection to your output display device. The graphics card fitted to your Clarity system unit may feature a second 24-pin female DVI-I output socket (**DVI-I VGA 2**).

Disk Array

- For increased external storage connect a suitable SCSI disk array to the 68-pin female HD D-type ULTRA SCSI 160 connector (**SCSI**).

Digital VTR or Edit Controller

- Plug the 9-pin (RS422/1) male D-type plug or 15-pin (RS422/2) male HD D-type plug on the communication cable connecting the VTR or Edit controller into the 9-pin female D-type socket (**RS422/1**) or 15-pin (**RS422/2**) female HD D-type socket.

Newsroom automation system or RapidRecall keypad

- Plug the 9-pin female D-type plug on the serial communication cable connecting the Newsroom automation system into the 9-pin male D-type socket (**COM 2**).

The network ports can also be used to connect newsroom automation systems and RapidRecall keypads.

GPI/GPO switching

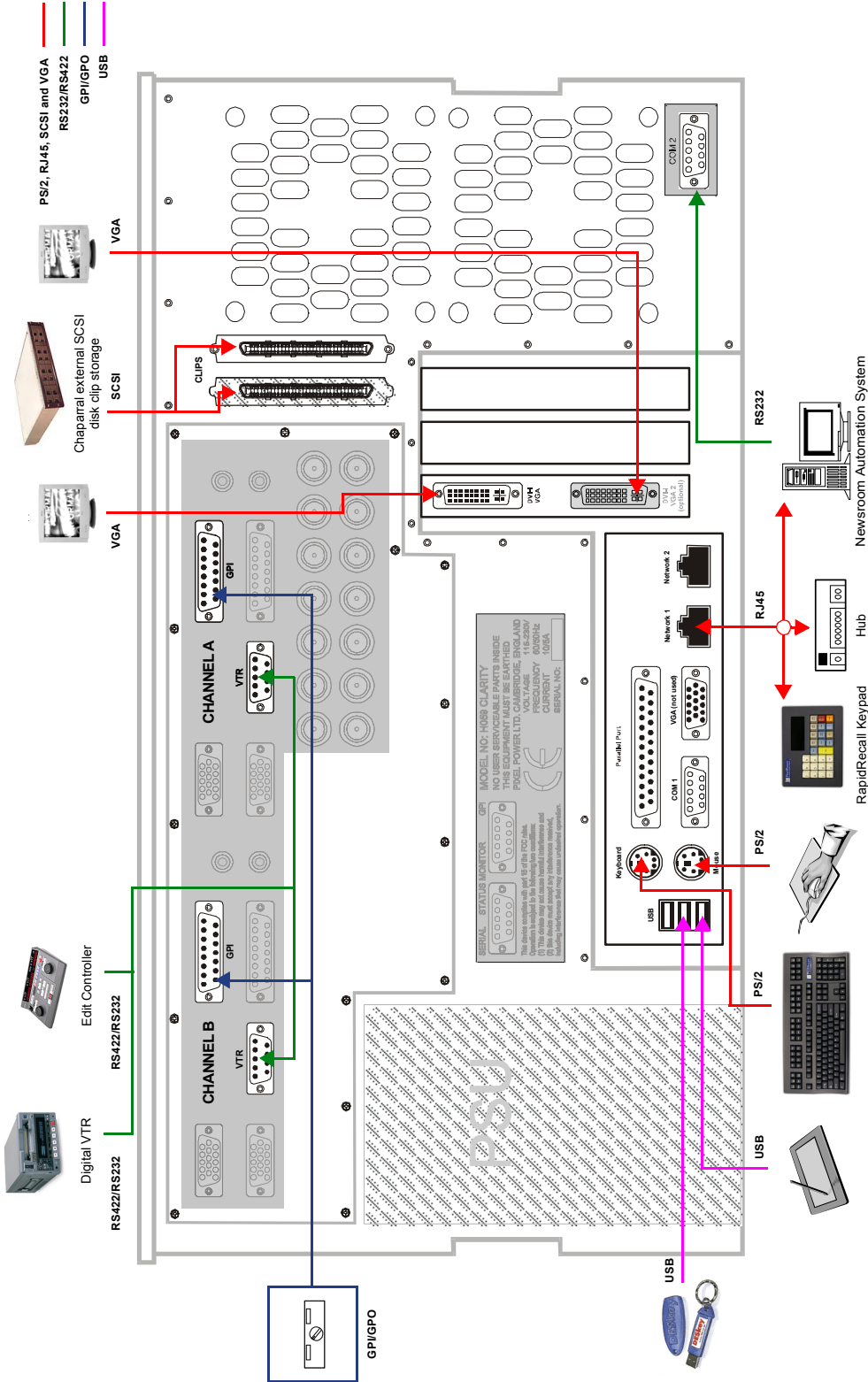
- Plug the 15-pin (RS422/1 & GPI/O) male HD D-type plug or 9-pin (GPI/O) female D-type plug on the communication cable connecting the GPI/GPO switching device into the 15-pin (**RS422/1 & GPI/O**) female HD D-type socket or 9-pin male D-type socket (**GPI/O**).

[LEGACY]

6.1.4.10 Clarity 500 STYLE A peripherals, networking and RS232/RS422/GPI/GPO

To connect the supplied peripherals and those supplied by you, follow the steps below. Please refer to the diagram below when attempting this section.

F-93 Clarity 500 STYLE A peripheral, networking and RS232/RS422/GPI/GPO [LEGACY]



6. Clarity and Clarity PREP PC Installation

Mouse and RapidAction keyboard

- A mouse and RapidAction keyboard are supplied with all Clarity 500 system units. Plug the PS/2 compatible mouse 6-pin mini-DIN plug into the bottom DIN socket (**Mouse**). Plug the RapidAction keyboard 6-pin mini-DIN plug into the top DIN socket (**Keyboard**).

Graphics tablet

- A graphics tablet is an option to Clarity 500 system units. Plug the male USB plug on the cable connecting the tablet into an available USB port (**USB**).

License dongle

- Plug the supplied Licence Dongle into an available USB port (**USB**). This **MUST** be fitted for the software to operate correctly.

Network

- If you are connecting a Clarity system unit to your Ethernet 10/100 network, do so using the RJ45 Ethernet 10/100 Network ports (**Network 1** or **Network 2**). The network ports can also be used to connect newsroom automation systems and RapidRecall keypads.

SVGA display

- Plug the video cable 24-pin male DVI-I plug of your monitor into the 24-pin female DVI-I output socket (**DVI-I VGA 1**).

24-pin female DVI-I output (provides both ANALOG and DIGITAL video signals). You may require a DVI male to 15-pin VGA adapter for connection to your output display device. The graphics card fitted to your Clarity system unit may feature a second 24-pin female DVI-I output socket (**DVI-I VGA 2**).

Chaparral external SCSI disk clip storage

- If your system unit features the optional video/audio clip option, plug in the 68-pin male HD D-type plug on the SCSI ULTRA 320 cable into an available 68-pin female HD D-type ULTRA SCSI 320 connector (**Clips**). Plug the other end (68-pin male VHDCI) into the external clip store (Chaparral).

If your system unit features the optional internal clip storage, then only the right-hand 68-pin female HD D-type connector will be available for the external clip storage; the left-hand socket will be blanked as this SCSI ULTRA 320 bus is used by the internal clip store.

Digital VTR or Edit Controller

- Plug the 9-pin male D-type plug on the communication cable connecting the VTR or Edit controller into the 9-pin female D-type socket (**VTR**).

This 9-pin male D-type socket is configurable between RS422 and RS232 operation. Refer to “[21.9.1 H087/H097 RS422/RS232 jumper configuration](#)” on page 21.31 for more information.

Newsroom automation system or RapidRecall keypad

- Plug the 9-pin female D-type plug on the serial communication cable connecting the Newsroom automation system into the 9-pin male D-type socket (**COM 2**).

The network ports can also be used to connect newsroom automation systems and RapidRecall keypads.

GPI/GPO switching

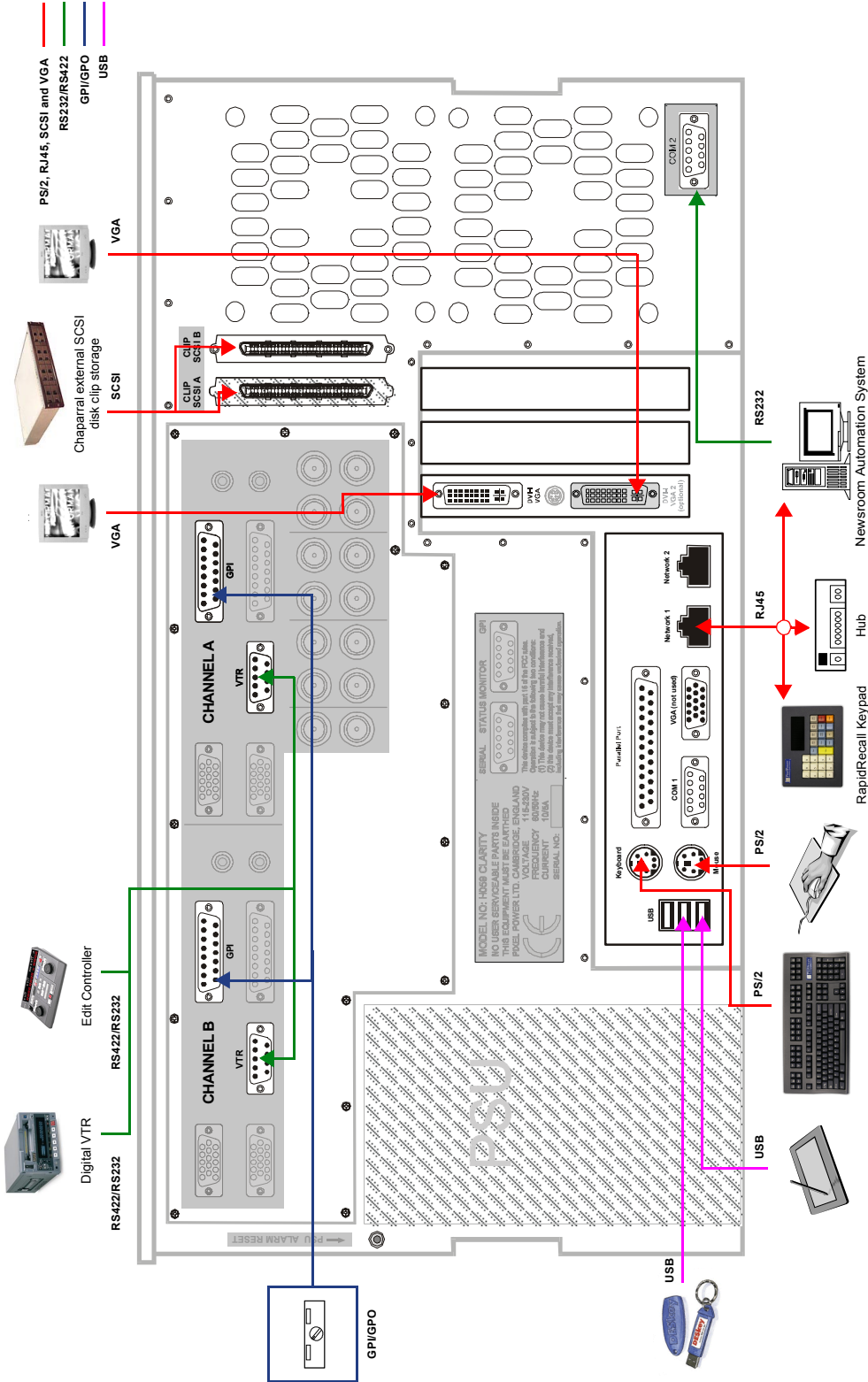
- Plug in the 15-pin male D-type plug on the communication cable connecting the GPI/GPO switching device into the 15-pin female D-type socket (**GPI**).

[LEGACY]

6.1.4.11 Clarity 500 STYLE B peripherals, networking and RS232/RS422/GPI/GPO

To connect the supplied peripherals and those supplied by you, follow the steps below. Please refer to the diagram below when attempting this section.

F-94 Clarity 500 STYLE B peripheral, networking and RS232/RS422/GPI/GPO [LEGACY]



6. Clarity and Clarity PREP PC Installation

Mouse and RapidAction keyboard

- A mouse and RapidAction keyboard are supplied with all Clarity 500 system units. Plug the PS/2 compatible mouse 6-pin mini-DIN plug into the bottom DIN socket (**Mouse**). Plug the RapidAction keyboard 6-pin mini-DIN plug into the top DIN socket (**Keyboard**).

Graphics tablet

- A graphics tablet is an option to Clarity 500 system units. Plug the male USB plug on the cable connecting the tablet into an available USB port (**USB**).

License dongle

- Plug the supplied Licence Dongle into an available USB port (**USB**). This MUST be fitted for the software to operate correctly.

Network

- If you are connecting a Clarity system unit to your Ethernet 10/100 network, do so using the RJ45 Ethernet 10/100 Network ports (**Network 1** or **Network 2**). The network ports can also be used to connect newsroom automation systems and RapidRecall keypads.

SVGA display

- Plug in the video cable 24-pin male DVI-I plug of your monitor into the 24-pin female DVI-I output socket (**DVI-I VGA 1**).

24-pin female DVI-I output (provides both ANALOG and DIGITAL video signals). You may require a DVI male to 15-pin VGA adapter for connection to your output display device. The graphics card fitted to your Clarity system unit may feature a second 24-pin female DVI-I output socket (**DVI-I VGA 2**).

Chaparral external SCSI disk clip storage

- If your system unit features the optional video/audio clip option, plug in the 68-pin male HD D-type plug on the SCSI ULTRA 320 cable into an available 68-pin female HD D-type ULTRA SCSI 320 connector (**CLIP SCSI A**) (**CLIP SCSI B**). Plug the other end (68-pin male VHDCI) into the external clip store (Chaparral).

If your system unit features the optional internal clip storage, then only the right-hand 68-pin female HD D-type connector (**CLIP SCSI B**) will be available for the external clip storage; the left-hand socket (**CLIP SCSI A**) will be blanked as this SCSI ULTRA 320 bus is used by the internal clip store.

Digital VTR or Edit Controller

- Plug the 9-pin male D-type plug on the communication cable connecting the VTR or Edit controller into the 9-pin female D-type socket (**VTR**).

This 9-pin male D-type socket is configurable between RS422 and RS232 operation. Refer to [“21.9.1 H087/H097 RS422/RS232 jumper configuration”](#) on page 21.31 for more information.

Newsroom automation system or RapidRecall keypad

- Plug the 9-pin female D-type plug on the serial communication cable connecting the Newsroom automation system into the 9-pin male D-type socket (**COM 2**).

The network ports can also be used to connect newsroom automation systems and RapidRecall keypads.

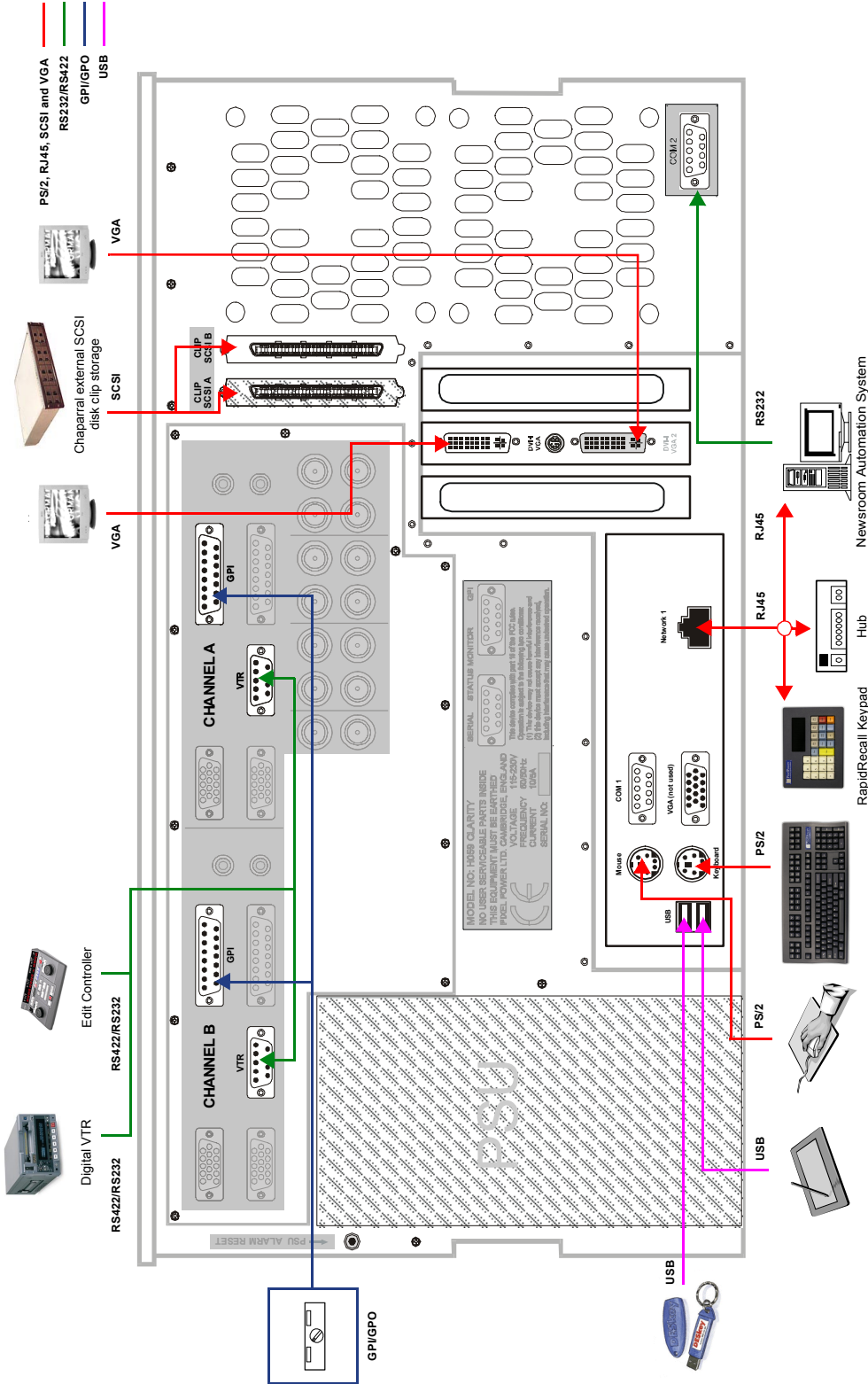
GPI/GPO switching

- Plug the 15-pin male D-type plug on the communication cable connecting the GPI/GPO switching device into the 15-pin female D-type socket (**GPI**).

6.1.4.12 Clarity 500 STYLE C peripherals, networking and RS232/RS422/GPI/GPO

To connect the supplied peripherals and those supplied by you, follow the steps below. Please refer to the diagram below when attempting this section.

F-95 Clarity 500 STYLE C peripheral, networking and RS232/RS422/GPI/GPO



6. Clarity and Clarity PREP PC Installation

Mouse and RapidAction keyboard

- A mouse and RapidAction keyboard are supplied with all Clarity 500 system units. Plug the PS/2 compatible mouse 6-pin mini-DIN plug into the top DIN socket (**Mouse**). Plug the RapidAction keyboard 6-pin mini-DIN plug into the bottom DIN socket (**Keyboard**).

Graphics tablet

- A graphics tablet is an option to Clarity 500 system units. Plug the male USB plug on the cable connecting the tablet into an available USB port (**USB**).

License dongle

- Plug the supplied Licence Dongle into an available USB port (**USB**). This **MUST** be fitted for the software to operate correctly.

Network

- If you are connecting a Clarity system unit to your Ethernet 10/100/1000 network, do so using the RJ45 Ethernet 10/100/1000 Network port (**Network 1**). The network port can also be used to connect newsroom automation systems and RapidRecall keypads.

SVGA display

- Plug in the video cable 24-pin male DVI-I plug of your monitor into the 24-pin female DVI-I output socket (**DVI-I VGA 1**).

24-pin female DVI-I output (provides both ANALOG and DIGITAL video signals). You may require a DVI male to 15-pin VGA adapter for connection to your output display device. The graphics card fitted to your Clarity system unit may feature a second 24-pin female DVI-I output socket (**DVI-I VGA 2**).

Chaparral external SCSI disk clip storage

- If your system unit features the optional video/audio clip option, plug in the 68-pin male HD D-type plug on the SCSI ULTRA 320 cable into an available 68-pin female HD D-type ULTRA SCSI 320 connector (**CLIP SCSI A**) (**CLIP SCSI B**). Plug the other end (68-pin male VHDCI) into the external clip store (Chaparral).

If your system unit features the optional internal clip storage, then only the right-hand 68-pin female HD D-type connector (**CLIP SCSI B**) will be available for the external clip storage; the left-hand socket (**CLIP SCSI A**) will be blanked as this SCSI ULTRA 320 bus is used by the internal clip store.

Digital VTR or Edit Controller

- Plug the 9-pin male D-type plug on the communication cable connecting the VTR or Edit controller into the 9-pin female D-type socket (**VTR**).

This 9-pin male D-type socket is configurable between RS422 and RS232 operation. Refer to [“21.9.1 H087/H097 RS422/RS232 jumper configuration”](#) on page 21.31 for more information.

Newsroom automation system or RapidRecall keypad

- Plug the 9-pin female D-type plug on the serial communication cable connecting the Newsroom automation system into the 9-pin male D-type socket (**COM 2**).

The network port can also be used to connect newsroom automation systems and RapidRecall keypads.

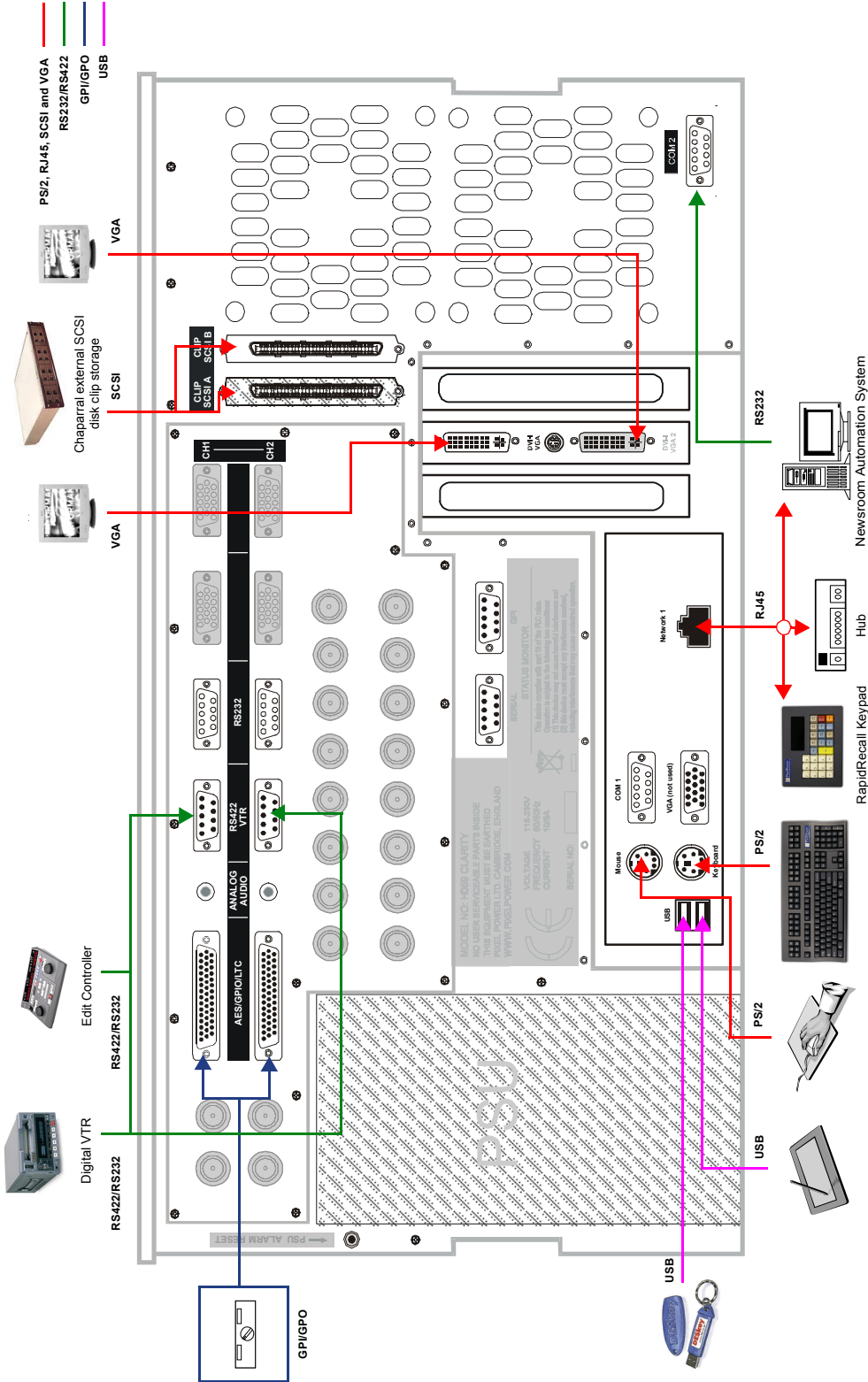
GPI/GPO switching

- Plug the 15-pin male D-type plug on the communication cable connecting the GPI/GPO switching device into the 15-pin female D-type socket (GPI).

6.1.4.13 Clarity 5000 STYLE A peripherals, networking and RS232/RS422/GPI/GPO

To connect the supplied peripherals and those supplied by you, follow the steps below when attempting this section.

F-96 Clarity 5000 STYLE A peripheral, networking and RS232/RS422/GPI/GPO



6. Clarity and Clarity PREP PC Installation

Mouse and RapidAction keyboard

- A mouse and RapidAction keyboard are supplied with all Clarity 5000 system units. Plug the PS/2 compatible mouse 6-pin mini-DIN plug into the top DIN socket (**Mouse**). Plug the RapidAction keyboard 6-pin mini-DIN plug into the bottom DIN socket (**Keyboard**).

Graphics tablet

- A graphics tablet is an option to Clarity 5000 system units. Plug the male USB plug on the cable connecting the tablet into an available USB port (**USB**).

License dongle

- Plug the supplied Licence Dongle into an available USB port (**USB**). This MUST be fitted for the software to operate correctly.

Network

- If you are connecting a Clarity system unit to your Ethernet 10/100/1000 network, do so using the RJ45 Ethernet 10/100/1000 Network port (**Network 1**). The network port can also be used to connect newsroom automation systems and RapidRecall keypads.

SVGA display

- Plug in the video cable 24-pin male DVI-I plug of your monitor into the 24-pin female DVI-I output socket (**DVI-I VGA 1**).

24-pin female DVI-I output (provides both ANALOG and DIGITAL video signals). You may require a DVI male to 15-pin VGA adapter for connection to your output display device. The graphics card fitted to your Clarity system unit may feature a second 24-pin female DVI-I output socket (**DVI-I VGA 2**).

Chaparral external SCSI disk clip storage

- If your system unit features the optional video/audio clip option, plug in the 68-pin male HD D-type plug on the SCSI ULTRA 320 cable into an available 68-pin female HD D-type ULTRA SCSI 320 connector (**CLIP SCSI A**) (**CLIP SCSI B**). Plug the other end (68-pin male VHDCI) into the external clip store (Chaparral).

If your system unit features the optional internal clip storage, then only the right-hand 68-pin female HD D-type connector (**CLIP SCSI B**) will be available for the external clip storage; the left-hand socket (**CLIP SCSI A**) will be blanked as this SCSI ULTRA 320 bus is used by the internal clip store.

Digital VTR or Edit Controller

- Plug the 9-pin male D-type plug on the communication cable connecting the VTR or Edit controller into the 9-pin female D-type socket (**RS422 VTR**).

Newsroom automation system or RapidRecall keypad

- Plug the 9-pin female D-type plug on the serial communication cable connecting the Newsroom automation system into the 9-pin male D-type socket (**COM 2**).

The network port can also be used to connect newsroom automation systems and RapidRecall keypads.

GPI/GPO switching

- Plug the 15-pin male D-type plug on the communication cable connecting the GPI/GPO switching device into the 15-pin female D-type socket (**AES/GPIO/LTC**).

6. Clarity and Clarity PREP PC Installation

6.1.4.14 Peripheral, networking, RS232/RS422, GPI/GPO and SCSI cable identification

The table below will help you identify and if necessary, purchase the cables necessary for connecting your system unit to peripheral, networking, RS232/RS422, GPI/GPO and SCSI devices.

F-97 Peripherals, networking, RS232/RS422 and GPI/GPO cable identification

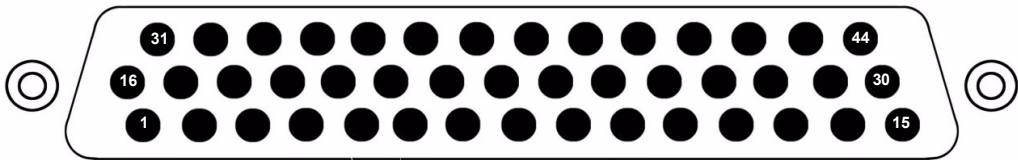
| Description | Illustration |
|---|--------------|
| GPI/GPO 15-pin female D-type to 15-pin male/female High Density (HD) D-type or 9-pin male/female D-type 15-pin female D-type to 15-pin female D-type | |
| VGA/RS232/RS422/GPI/GPO 15-pin female High Density (HD) D-type to 15-pin male/female High Density (HD) D-type | |
| RS232 9-pin male/female D-type to 9-pin male/female D-type | |
| SCSI (Clips) (External Clip Storage) 68-pin male VHDCI to 68-pin male HD D-type | |
| SCSI (Clarity 200 and 300) (Opt. Ext. Clip Storage) 68-pin male VHDCI to 68-pin male VHDCI | |

6. Clarity and Clarity PREP PC Installation

6.1.4.15 Clarity 100, 200 and 300 44-pin breakout communication cable data

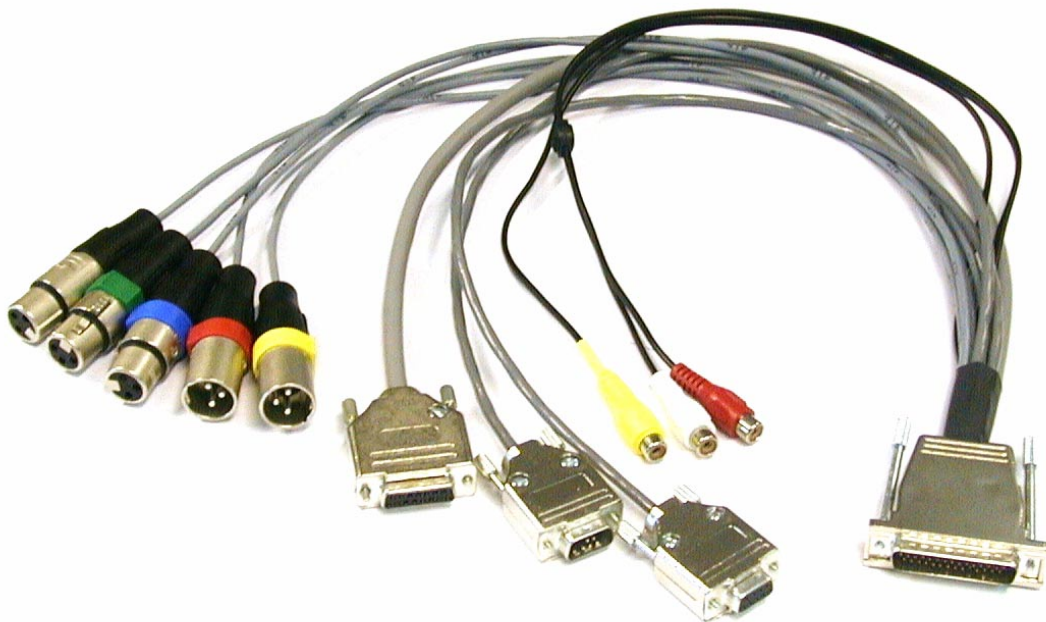
Due to rear panel space limitations, Clarity 100, 200 and 300 systems employ a 44-pin female HD D-type socket on their respective rear panels to enable GPI/O, digital/analogue audio, bypass tally, LTC, RS232 and RS422 signal distribution.

F-98 44-pin high density female HD D-type connector (Clarity 100, 200 and 300)



A specialised multi-function cable can be purchased (PP8449) or created to distribute and receive signals to respective external devices and peripherals.

F-99 44-way breakout communication cable for H096 revision A connections (PP8449)



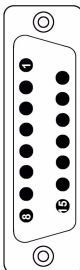
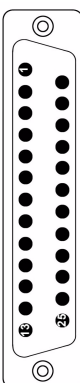
The table identifies all of the connectors that can be utilised, as shown in the picture above.

Pinout mappings are dependant on the version of the H096 Standard Definition (SD) Framestore CPU and Input/Output (I/O) + Audio PCB fitted within your system. Refer to [“20.2.3 Framestore CPU and Input/Output \(I/O\) \(H096 and H100\)”](#) on page 20.5 for more information. The version of this PCB can be checked using the **Rack** dialog tab on the **Local Preferences** dialog box. Refer to [“19.4.1.1 Main Board Manufacturing Information status box”](#) on page 19.9 for more information.

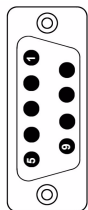
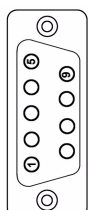
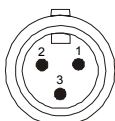

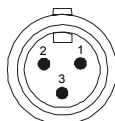

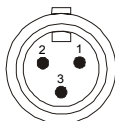
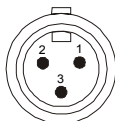
Pinout mapping to respective connectors is only a guide and may be different depending on the equipment you are connecting to.

6. Clarity and Clarity PREP PC Installation

F-100 Clarity 100/200/300 GPI/O, audio, bypass tally, LTC and RS232/RS422 pinout mapping

| Connector Description | | Pin | H096 revision A connections | | H096 revision B onwards connections | | Connector |
|--|----------------------|-----|-----------------------------|--------------------|-------------------------------------|--------------------|--|
| | | | 44-pin D-type pin | Signal | 44-pin D-type pin | Signal | |
| GPI/ GPO/ TALLY GPI - connect to ground (through a contact closure) for operation, pulled up to +5v at Clarity end GPO relay - up to 30V dc, 0.5A, undedicated contact closure Tally relay - up to 30V dc, 0.5A, undedicated contact change over | 15-pin female D-type | 1 | 7 | GPI 1 | | |  |
| | | 2 | 8 | GPI 2 | | | |
| | | 3 | 37 | GPI 3 | | | |
| | | 4 | 38 | GPI 4 | | | |
| | | 5 | 9 | GPO 1 N/O | | | |
| | | 6 | 24 | GPO 1 wiper | | | |
| | | 7 | 10 | GPO 2 N/O | | | |
| | | 8 | 25 | GPO 2 wiper | | | |
| | | 9 | 21 | Ground | | | |
| | | 10 | 22 | Ground | | | |
| | | 11 | Not used | | | | |
| | | 12 | 23 | Ground | | | |
| | | 13 | 42 | Bypass tally N/O | | | |
| | | 14 | 43 | Bypass tally wiper | | | |
| | | 15 | 44 | Bypass tally N/C | | | |
| GPI/ GPO/ TALLY GPI - connect to ground (through a contact closure) for operation, pulled up to +5v at Clarity end GPO relay - up to 30V dc, 0.5A, undedicated contact closure Tally relay - up to 30V dc, 0.5A, undedicated contact change over | 25-pin female D-type | 1 | | | 7 | GPI 1 |  |
| | | 2 | | | 8 | GPI 2 | |
| | | 3 | | | 37 | GPI 3 | |
| | | 4 | | | 38 | GPI 4 | |
| | | 5 | | | 9 | GPO 1 N/O | |
| | | 6 | | | 24 | GPO 1 wiper | |
| | | 7 | | | 10 | GPO 2 N/O | |
| | | 8 | | | 25 | GPO 2 wiper | |
| | | 9 | | | 15 | Ground | |
| | | 10 | | | 30 | Ground | |
| | | 11 | | | Not used | | |
| | | 12 | | | Not used | | |
| | | 13 | | | 42 | Bypass tally N/O | |
| | | 14 | | | 43 | Bypass tally wiper | |
| | | 15 | | | 44 | Bypass tally N/C | |
| | | 16 | | | 20 | GPO 3 N/O | |
| | | 17 | | | 21 | GPO 3 wiper | |
| | | 18 | | | 22 | GPO 4 N/O | |
| | | 19 | | | 23 | GPO 4 wiper | |
| | | 20 | | | Not used | | |
| | | 21 | | | Not used | | |
| | | 22 | | | Not used | | |
| | | 23 | | | Not used | | |
| | | 24 | | | Not used | | |
| | | 25 | | | Not used | | |

6. Clarity and Clarity PREP PC Installation

| Connector Description | | Pin | H096 revision A connections | | H096 revision B onwards connections | | Connector |
|-----------------------|---------------------------------|-------------------|-----------------------------|--------------|-------------------------------------|--------------|---|
| | | | 44-pin D-type pin | Signal | 44-pin D-type pin | Signal | |
| RS422 | 9-pin female D-type | 1 | 30 | RS422 Ground | 30 | RS422 Ground |  |
| | | 2 | 29 | RS422 RX- | 29 | RS422 RX- | |
| | | 3 | 26 | RS422 TX+ | 26 | RS422 TX+ | |
| | | 4 | 30 | RS422 Ground | 30 | RS422 Ground | |
| | | 5 | Not used | | Not used | | |
| | | 6 | 30 | RS422 Ground | 30 | RS422 Ground | |
| | | 7 | 28 | RS422 RX+ | 28 | RS422 RX+ | |
| | | 8 | 27 | RS422 TX- | 27 | RS422 TX- | |
| | | 9 | 30 | RS422 Ground | 30 | RS422 Ground | |
| RS232 | 9-pin male D-type | 1 | Not used | | Not used | |  |
| | | 2 | 12 | RS232 RX | 12 | RS232 RX | |
| | | 3 | 11 | RS232 TX | 11 | RS232 TX | |
| | | 4 | 13 | RS232 RTS | 13 | RS232 RTS | |
| | | 5 | 15 | RS232 Ground | 15 | RS232 Ground | |
| | | 6 | Not used | | Not used | | |
| | | 7 | 13 | RS232 RTS | 13 | RS232 RTS | |
| | | 8 | 14 | RS232 CTS | 14 | RS232 CTS | |
| | | 9 | Not used | | Not used | | |
| Digital Audio | AES Audio In A Green Female XLR | 1 - Screen | 17 | Ground | 17 | Ground |  |
| | | 2 - Red | 2 | AES 1-2 RX+ | 2 | AES 1-2 RX+ | |
| | | 3 - Black | 32 | AES 1-2 RX - | 32 | AES 1-2 RX - | |
| | AES Audio Out A Red Male XLR | 1 - Screen | 16 | Ground | 16 | Ground |  |
| | | 2 - Red | 1 | AES 1-2 TX+ | 1 | AES 1-2 TX+ | |
| | | 3 - Black | 31 | AES 1-2 TX - | 31 | AES 1-2 TX - | |
| | AES Audio In B Blue Female XLR | 1 - Screen | 19 | Ground | 19 | Ground |  |
| | | 2 - Red | 4 | AES 3-4 RX+ | 4 | AES 3-4 RX+ | |
| | | 3 - Black | 34 | AES 3-4 RX- | 34 | AES 3-4 RX- | |
| | AES Audio Out B Yellow Male XLR | 1 - Screen | 18 | Ground | 18 | Ground |  |
| | | 2 - Red | 3 | AES 3-4 TX+ | 3 | AES 3-4 TX+ | |
| | | 3 - Black | 33 | AES 3-4 TX- | 33 | AES 3-4 TX- | |
| LTC In | LTC In Black Female XLR | 1 - Screen | 20 | Ground | 36 | Ground |  |
| | | 2 - Red | 5 | LTC IN+ | 5 | LTC IN+ | |
| | | 3 - Black | 35 | LTC IN- | 35 | LTC IN- | |
| LTC Out | Yellow Phono | Centre | 6 | LTC OUT | 6 | LTC OUT |  |
| | | Screen | 36 | Ground | 36 | Ground | |

6. Clarity and Clarity PREP PC Installation

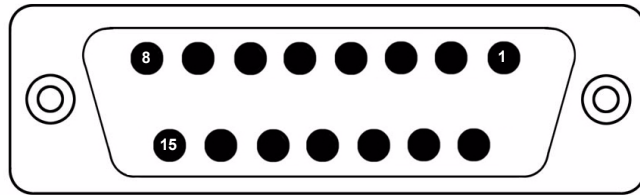
| Connector Description | | Pin | H096 revision A connections | | H096 revision B onwards connections | | Connector |
|------------------------|--|------------------|-----------------------------|-----------------|-------------------------------------|-----------------|-----------|
| | | | 44-pin D-type pin | Signal | 44-pin D-type pin | Signal | |
| Ana- logue Audio | Monitor Audio Left Black or White Phono | Centre Screen | 41 40 | Left Ground | 41 40 | Left Ground | |
| | Monitor Audio Right Red Phono | Centre Screen | 39 40 | Right Ground | 39 40 | Right Ground | |

6. Clarity and Clarity PREP PC Installation

6.1.4.16 Clarity 500 15-way breakout digital audio/LTC cable data

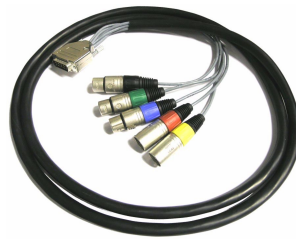
Clarity 500 systems employ a 15-pin female D-type socket on their respective rear panels to enable digital audio and LTC signal distribution.

F-101 15-pin female D-type connector (Clarity 500)



A specialised cable can be purchased (PP8473) or created to distribute and receive signals to respective external devices and peripherals.

F-102 Clarity 15-way breakout digital audio/LTC cable (PP8473)



The table identifies all of the connectors that can be utilised, as shown in the picture above. Pin out mapping to respective connectors is only a guide and may be different depending on the equipment you are connecting to.

F-103 Clarity 500 digital audio and LTC pinout mapping

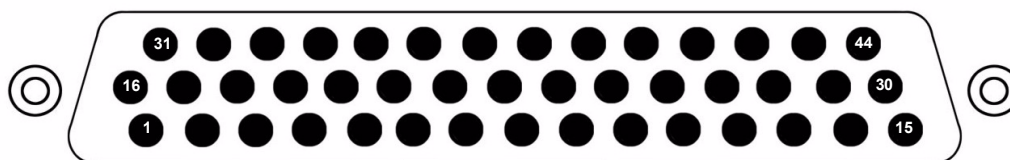
| Connector Description | | XLR Pin | 15-pin D-type pin | Signal | Connector Illustration |
|-----------------------|---------------------------------|------------------------------------|-------------------|--------------------------------------|------------------------|
| Digital Audio | AES Audio In A Green Female XLR | 1 - Screen 2 - Red 3 - Black | 12 4 5 | Ground AES 1-2 RX+ AES 1-2 RX- | |
| | AES Audio Out A Red Male XLR | 1 - Screen 2 - Red 3 - Black | 9 1 2 | Ground AES 1-2 TX+ AES 1-2 TX- | |
| | AES Audio In B Blue Female XLR | 1 - Screen 2 - Red 3 - Black | 6 13 14 | Ground AES 3-4 RX+ AES 3-4 RX- | |
| | AES Audio Out B Yellow Male XLR | 1 - Screen 2 - Red 3 - Black | 3 10 11 | Ground AES 3-4 TX+ AES 3-4 TX- | |
| LTC In | LTC In Black Female XLR | 1 - Screen 2 - Red 3 - Black | 15 7 8 | Ground LTC IN+ LTC IN- | |

6. Clarity and Clarity PREP PC Installation

6.1.4.17 Clarity 5000 44-pin breakout communication cable data

Due to rear panel space limitations, Clarity 5000 systems employ a 44-pin female HD D-type socket on their respective rear panels to enable GPI/O, digital audio, bypass/watchdog tally and LTC signal distribution.

F-104 44-pin high density female HD D-type connector (Clarity 5000)



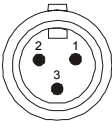

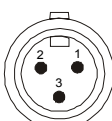

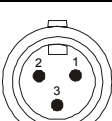

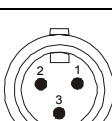

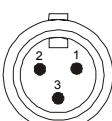
A specialised multi-function cable can be purchased (PP8514) or created to distribute and receive signals to respective external devices and peripherals. The table identifies all of the connectors that can be utilised.

Pinout mapping to respective connectors is only a guide and may be different depending on the equipment you are connecting to.

F-105 Clarity 5000 GPI/O, digital audio, bypass/watchdog tally and LTC pinout mapping

| Connector Description | | Pin | 44-pin D-type pin | Signal | Connector |
|--|----------------------|-----|-------------------|---|-----------|
| GPI/ GPO/ WATCH DOG BYPASS TALLY GPI - connect to ground (through a contact closure) for operation, pulled up to +5v at Clarity end GPO relay - up to 30V dc, 0.5A, undedicated contact closure Tally relay - up to 30V dc, 0.5A, undedicated contact change over AES inputs have power fail relay bypass to AES outputs. Power fail bypass state is indicated by Relay Bypass Tally. | 25-pin female D-type | 1 | 12 | GPI 1 (ground to activate, do not drive high above +5v) | |
| | | 2 | 42 | GPI 2 (ground to activate, do not drive high above +5v) | |
| | | 3 | 13 | GPI 3 (ground to activate, do not drive high above +5v) | |
| | | 4 | 43 | GPI 4 (ground to activate, do not drive high above +5v) | |
| | | 5 | 14 | GPO 1 (normally open when GPO inactive) | |
| | | 6 | 29 | GPO 1 wiper | |
| | | 7 | 15 | GPO 2 (normally open when GPO inactive) | |
| | | 8 | 30 | GPO 2 wiper | |
| | | 9 | 10 | Relay bypass tally (normally closed when bypassed) | |
| | | 10 | 25 | Relay bypass tally wiper | |
| | | 11 | 40 | Relay bypass tally (normally open when bypassed) | |
| | | 12 | Not used | | |
| | | 13 | Not used | | |
| | | 14 | 27 | Ground | |
| | | 15 | 27 | Ground | |
| | | 16 | 28 | Ground | |
| | | 17 | 28 | Ground | |
| | | 18 | 11 | Watch dog bypass tally (normally closed when bypassed) | |
| | | 19 | 26 | Watch dog bypass tally wiper | |
| | | 20 | 41 | Watch dog bypass tally (normally open when bypassed) | |
| | | 21 | Not used | | |
| | | 22 | Not used | | |
| | | 23 | Not used | | |
| | | 24 | Not used | | |
| | | 25 | Not used | | |

6. Clarity and Clarity PREP PC Installation

| Connector Description | | Pin | 44-pin D-type pin | Signal | Connector |
|-----------------------|----------------------------------|------------------------------------|-------------------|---------------------------------------|---|
| Digital Audio | AES Audio In A Green Female XLR | 1 - Screen 2 - Red 3 - Black | 16 1 31 | Ground AES 1-2 RX+ AES 1-2 RX - |  |
| | AES Audio Out A Red Male XLR | 1 - Screen 2 - Red 3 - Black | 17 2 32 | Ground AES 1-2 TX+ AES 1-2 TX - |  |
| | AES Audio In B Blue Female XLR | 1 - Screen 2 - Red 3 - Black | 18 3 33 | Ground AES 3-4 RX+ AES 3-4 RX- |  |
| | AES Audio Out B Yellow Male XLR | 1 - Screen 2 - Red 3 - Black | 19 4 34 | Ground AES 3-4 TX+ AES 3-4 TX- |  |
| | AES Audio In C Violet Female XLR | 1 - Screen 2 - Red 3 - Black | 20 5 35 | Ground AES 5-6 RX+ AES 5-6 RX - |  |
| | AES Audio Out C Grey Male XLR | 1 - Screen 2 - Red 3 - Black | 21 6 36 | Ground AES 5-6 TX+ AES 5-6 TX - |  |
| | AES Audio In D White Female XLR | 1 - Screen 2 - Red 3 - Black | 22 7 37 | Ground AES 7-8 RX+ AES 7-8 RX- |  |
| | AES Audio Out D Orange Male XLR | 1 - Screen 2 - Red 3 - Black | 23 8 38 | Ground AES 7-8 TX+ AES 7-8 TX- |  |
| LTC In | LTC In Black Female XLR | 1 - Screen 2 - Red 3 - Black | 24 9 39 | Ground LTC IN+ LTC IN- |  |
| LTC Out | Yellow Phono | Centre Screen | 44 16 | LTC OUT Ground | |

6. Clarity and Clarity PREP PC Installation

6.1.4.18 System unit video/audio and data

Specific manual sections relating to particular connection scenarios for systems units with different hardware characteristics (rear panel etc.) have been created. Please refer to a section in the table below that corresponds most closely to your circumstances.

F-106 System unit video/audio and data connection information

| System unit variant + options | Section |
|---|---|
| Clarity 100 with Audio clip option | Refer to “ 7. Clarity 100 STYLE A Connection Schematic [CLAR-ITY] ” on page 7.1 for more information. |
| Clarity 200 with Video clip and Auxiliary output options | Refer to “ 8. Clarity 200 STYLE A Connection Schematic [CLAR-ITY] ” on page 8.1 for more information. |
| Clarity 300 with Video clip and Auxiliary output options | Refer to “ 9. Clarity 300 STYLE A Connection Schematic [CLAR-ITY] ” on page 9.1 for more information. |
| Clarity 3000 with Video and Audio clip options | Refer to “ 10. Clarity 3000 STYLE A Connection Schematic [CLARITY] ” on page 10.1 for more information. |
| Clarity 500 Dual Channel SD with Video and Audio clip options | Refer to “ 11. Clarity 500 STYLE C Connection Schematic [CLAR-ITY] ” on page 11.1 for more information. |
| Clarity 5000 Dual Channel SD/HD with Video and Audio clip options | Refer to “ 12. Clarity 5000 STYLE A Connection Schematic [CLARITY] ” on page 12.1 for more information. |

6.2 Clarity PREP and Clarity Plugin

[PREP]

6.2.1 Unpacking the product

When you have unpacked, please retain the packaging in case you need to return the CD for any reason. Please refer to the packing list included with the product documentation. If anything appears to be missing, please contact your dealer in the first instance.

6.2.2 Recording important information

6.2.2.1 Licence dongle serial numbers

If you have not done so already, make a note of the serial number(s) located on the licence dongle(s) supplied with the CD-ROM.



6.2.3 PC specification

Check that the selected PC meets the following specification before continuing:

F-107 Clarity PREP and Clarity Plugin minimum and recommended specification

| Component | Specification | |
|-------------------------|---|---|
| | Minimum | Recommended |
| Processor | 1Ghz Pentium III processor | 2.4Ghz Pentium 4 processor or AMD equivalent |
| System Memory | 256 Mb | 512 Mb (1Gb if using software payout) |
| Disk Space | 500 Mb free disk space | For the storage of media using software payout and the Ramcorder, we recommend the availability of a reasonable amount of free space (10Gb) on the main drive of the PC or the use of a separate RAID array disk system |
| Display Adapter | 1280 x 1024 or larger full color 32 bit display | |
| Monitor | 17" or larger XGA/SXGA monitor | |
| Operating System | Microsoft® Windows® 2000 | Microsoft® Windows® XP Professional |
| Connectivity | None | Microsoft® Windows Services for UNIX client software for communication with Collage (available as an option), 10/100 BaseT ethernet interface |
| Storage | CD-ROM drive (necessary for first installation) | CD-ROM drive (necessary for CG Tools installation), 250 Mb Iomega Zip drive (recommended for job export to Collage, Collage 2 or Clarity) |
| Peripherals | PC keyboard and mouse (RapidAction keyboard and graphics tablet optional) | RapidAction keyboard, mouse and graphics tablet |

6. Clarity and Clarity PREP PC Installation

6.2.4 Setting up a PC

This section describes how to make sure that the selected PC is correctly configured for the subsequent use of the Clarity PREP and Clarity Plugin software.

6.2.4.1 Peripherals

To connect the licence dongle and optional RapidAction keyboard and graphics tablet, follow the steps below. The diagram shows a popular ATX form factor rear panel layout.

RapidAction Keyboard (optional)

- Plug the RapidAction PS/2 keyboard 6-pin mini-DIN plug into the PS/2 DIN socket on the rear panel of the PC.

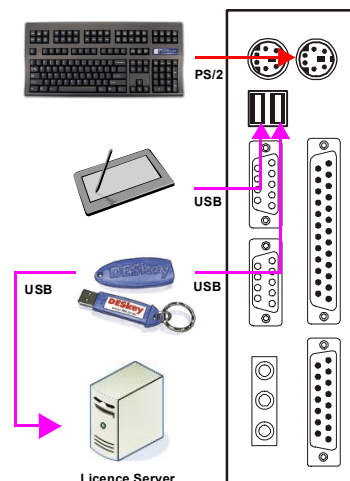
Graphics tablet (optional)

- A graphics tablet is an option with Clarity PREP or Clarity Plugin software. Plug the male USB plug on the cable connecting the tablet into an available USB port (**USB**).

License dongle

- Plug the supplied Licence Dongle into an available USB port (**USB**). This **MUST** be fitted for the software to operate correctly.

If you have purchased a multiple licence dongle (floating licence), you will need to plug this into an available USB port on the networked machine that the software clients will access when starting their copy of the software. The location of the machine operating as the networked licence server is specified during each CG Tools software installation on each of the client machines.



For more details on installing the DK2 DESKey Network Server software on the machine enlisted as the network licence server, refer to [“13.3.2 Clarity PREP and Clarity Plugin licensing”](#) on page 13.4 for more information.

6.3 What next?

6.3.1 Clarity

Now that you have connected up your system unit, you can power on, log in, start finding your way around the system unit and set up any peripherals. Refer to [“14. Basics”](#) on page 14.1 for more information.

There is no requirement to install the CG Tools software as it is already pre-installed on the system unit.

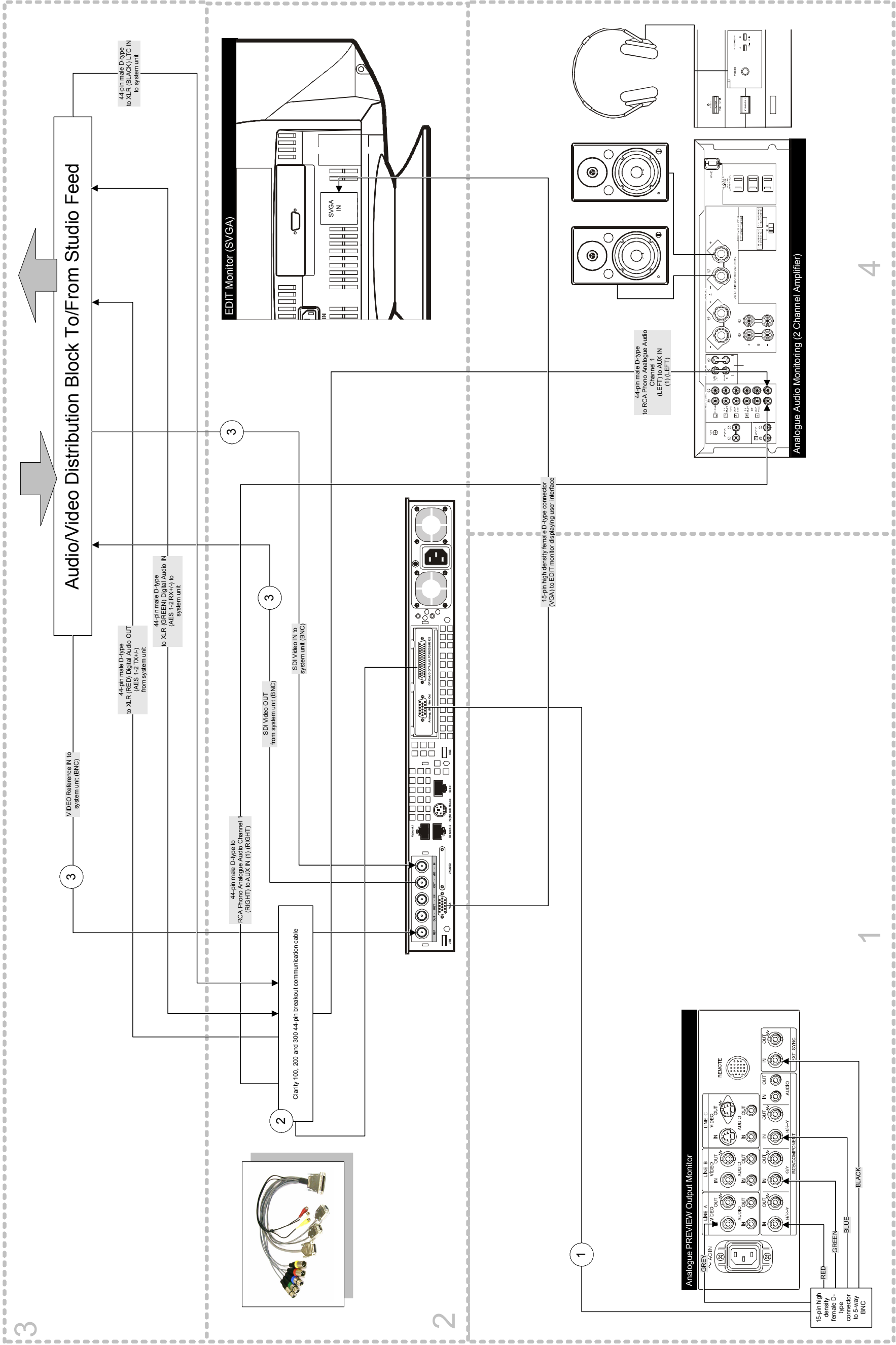
If you have purchased Microsoft Windows Services for UNIX to enable networking connectivity with Collage or Graphite, refer to [“13. Software Installation and Upgrade”](#) on page 13.1 for more information.

6.3.2 Clarity PREP and Clarity Plugin

If you have connected your selected PC ready for the installation of the CG Tools software (Clarity PREP or Clarity Plugin), you can now proceed with the software installation. Refer to [“13. Software Installation and Upgrade”](#) on page 13.1 for more information.

7. Clarity 100 STYLE A Connection Schematic

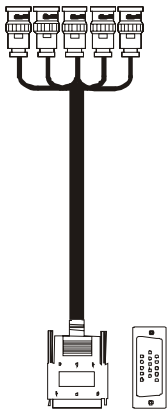
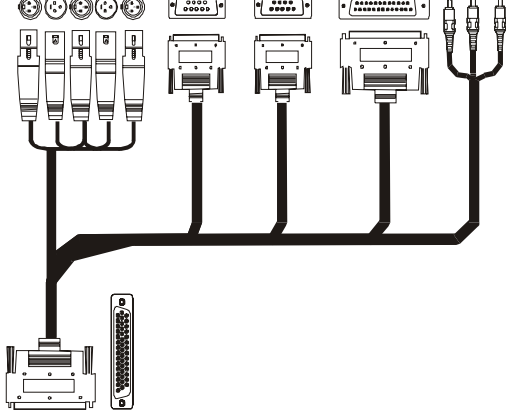

[CLARITY]



7.1 Audio, video and data cabling identification

The table below will help you identify and if necessary, purchase the audio, video and data cables necessary for connecting your system unit in the way shown in the schematic.

F-108 Audio, video and data cabling identification

| Label | Description | Quantity | Illustration |
|-------|--|----------|---|
| 1 | 15-pin male High Density D-type connector to 5-way BNC | 1 |  |
| 2 | 44-pin breakout communication cable data Refer to “6.1.4.15 Clarity 100, 200 and 300 44-pin breakout communication cable data” on page 6.41 for more information. | 1 |  |
| 3 | BNC to BNC | 3 |  |

7.2 Schematic synopsis

The Clarity 100 STYLE A system unit shown in the schematic is equipped with the optional audio facility (includes de-embed, group mix, clip playback and re-embed capability).

7.2.1 PREVIEW monitors (Analogue) (1)

Analogue monitoring for the single channel is achieved via the connection of a broadcast quality monitor using a standard 15-pin high density male D-type connector (HD SVGA) to 5-way BNC cable between the **Analogue Monitor Out** port on the system unit and the **RGB Component R/R_Y, G/G_Y and B/B_Y, Sync** and **Line A Video IN** BNC connectors on the monitor rear panel.

The grey cable connected to the **Line A Video IN** BNC connector displays the key signal. This additional connection is useful for switching between the key output and the full component video output.

7.2.2 EDIT monitor (Analogue) (2)

The EDIT monitor displays the software user interface for the system unit. Analogue connection between the system unit and SVGA monitor is achieved via a 15-pin high density male D-type cable that plugs into the **VGA** port on the system unit.

7.2.3 A/V/LTC in/out and Reference in (3)

The digital audio and video feed is supplied via a local distribution block connected to a studio A/V feed

capable of transmitting and receiving SDI video streams and AES/EBU compliant digital audio. SDI video connections between the distribution block and the system unit are made using industry standard BNC to BNC cables.

Audio connection is made using the available XLR connectors on the 44-pin breakout communication cable. The connection pinouts can be used as a guide when creating the cable. Refer to “[4.13.5.5 44-pin high density \(HD\) D-type female connector \(multi-purpose\)](#)” on page 4.79 for more information. Also refer to “[6.1.4.15 Clarity 100, 200 and 300 44-pin breakout communication cable data](#)” on page 6.41 for more information.

7.2.4 Local analogue audio monitoring (4)

Local analogue audio monitoring is achieved via the connection of a 2 channel amplifier that has the facility for the connection of 2 auxiliary RCA phono inputs (**Left** and **Right**). Audio connection is made using the available RCA phono connectors on the 44-pin breakout communication cable.

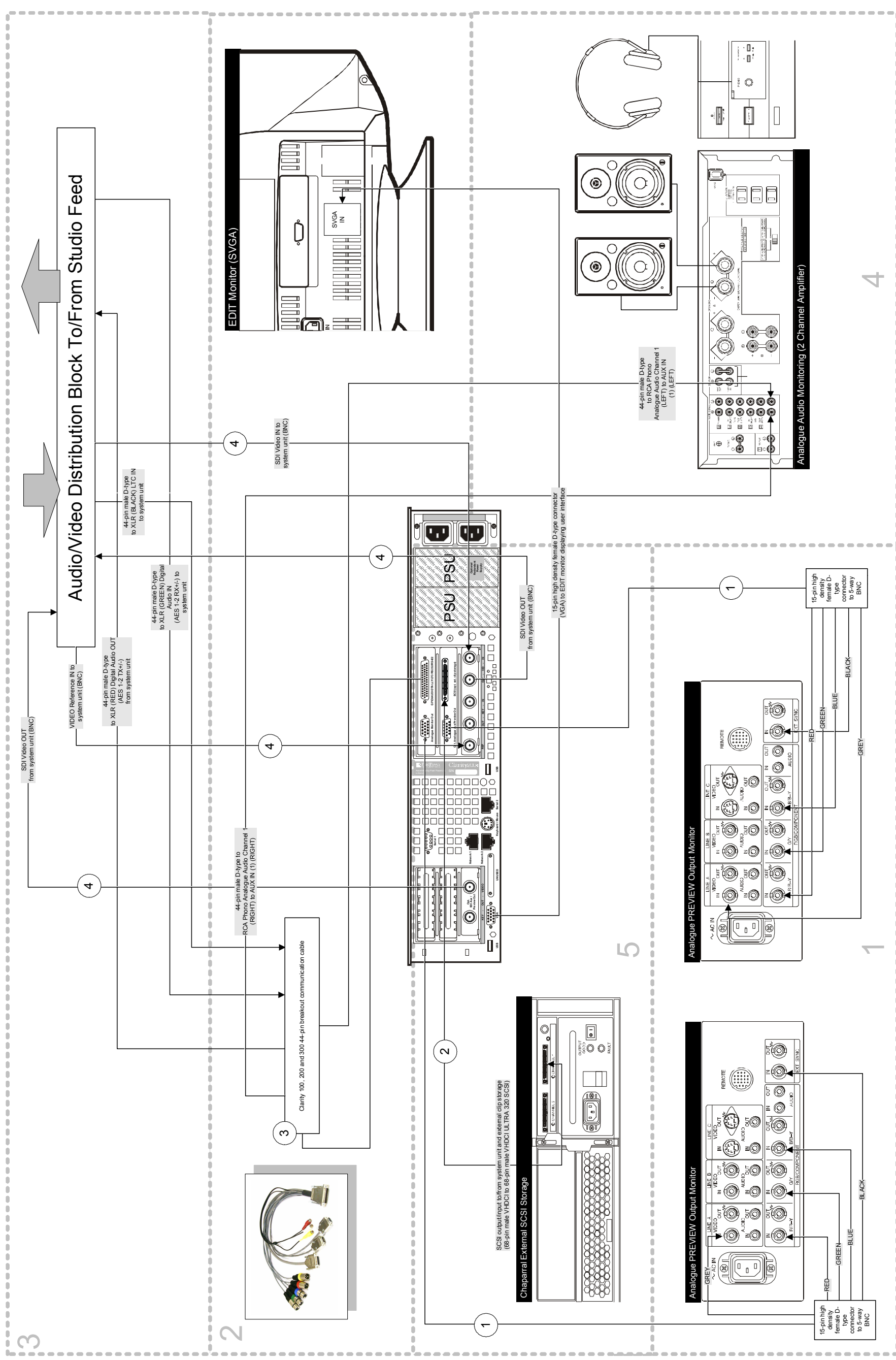
The connection pinouts can be used as a guide when creating the cable. Refer to “[4.13.5.5 44-pin high density \(HD\) D-type female connector \(multi-purpose\)](#)” on page 4.79 for more information. Also refer to “[6.1.4.15 Clarity 100, 200 and 300 44-pin breakout communication cable data](#)” on page 6.41 for more information.

Headphones can be used if preferred, via connection through the external amplifier headphone socket.

It is also possible to use self-powered PC style monitor speakers if an external amplifier and high quality monitoring speakers are not available.

8. Clarity 200 STYLE A Connection Schematic

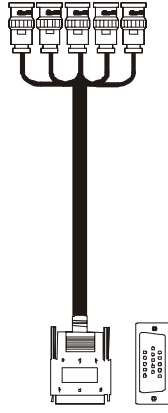
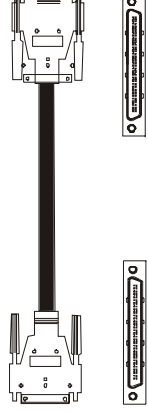
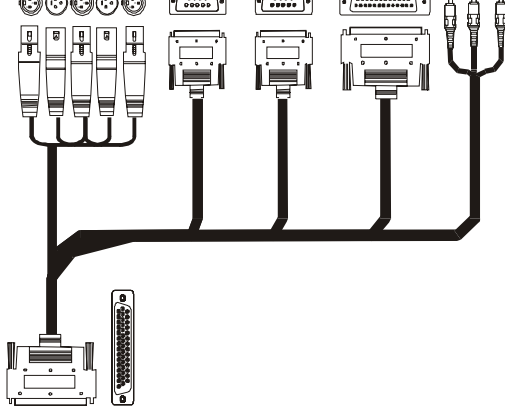

[CLARITY]



8.1 Audio, video and data cabling identification

The table below will help you identify and if necessary, purchase the audio, video and data cables necessary for connecting your system unit in the way shown in the schematic.

F-109 Audio, video and data cabling identification

| Label | Description | Quantity | Illustration |
|-------|--|----------|---|
| 1 | 15-pin male High Density D-type connector to 5-way BNC | 2 |  |
| 2 | 68-pin male VHDCI to 68-pin male VHDCI | 1 |  |
| 3 | 44-pin breakout communication cable data Refer to “6.1.4.15 Clarity 100, 200 and 300 44-pin breakout communication cable data” on page 6.41 for more information. | 1 |  |
| 4 | BNC to BNC | 4 |  |

8.2 Schematic synopsis

The Clarity 200 STYLE A system unit shown in the schematic is equipped with the optional audio video clip/auxiliary output option. This adds an SDI video and key output for preview, a second HD15 connector for analog monitor output with RGB/YUV/Composite/YC and an external SCSI connector for clip storage expansion.

8.2.1 PREVIEW monitors (Analogue) (1)

Analogue monitoring is achieved via the connection of broadcast quality monitors using standard 15-pin high density male D-type connector (HD SVGA) to 5-way BNC cables between the **Analogue Monitor Out** and **Opt. Analogue Aux/Preview Out** ports on the system unit and the **RGB Component R/R**, **G/GY** and **B/BY**, Sync and **Line A Video IN** BNC connectors on the monitor rear panels.

The grey cable connected to the **Line A Video IN** BNC connector displays the key signal. This additional connection is useful for switching between the key output and the full component video output.

8.2.2 EDIT monitor (Analogue) (2)

The EDIT monitor displays the software user interface for the system unit. Analogue connection between the system unit and SVGA monitor is achieved via a 15-pin high density male D-type cable that plugs into the **VGA** port on the system unit.

8.2.3 AV/LTC in/out and Reference in (3)

The digital audio and video feed is supplied via a local distribution block connected to a studio A/V feed capable of transmitting and receiving SDI video streams and AES/EBU compliant digital audio. SDI video connections between the distribution block and the system unit are made using industry standard BNC to BNC cables.

Audio connection is made using the available XLR connectors on the 44-pin breakout communication cable. The connection pinouts can be used as a guide when creating the cable. Refer to “4.13.5.5 44-pin high density (HD) D-type female connector (multi-purpose)” on page 4.79 for more information. Also refer to “6.1.4.15 Clarity 100, 200 and 300 44-pin breakout communication cable data” on page 6.41 for more information.

8.2.4 Local analogue audio monitoring (4)

Local analogue audio monitoring is achieved via the connection of a 2 channel amplifier that has the facility for the connection of 2 auxiliary RCA phono inputs (**Left** and **Right**). Audio connection is made using the available RCA phono connectors on the 44-pin breakout communication cable.

The connection pinouts can be used as a guide when creating the cable. Refer to “4.13.5.5 44-pin high density (HD) D-type female connector (multi-purpose)” on page 4.79 for more information. Also refer to “6.1.4.15 Clarity 100, 200 and 300 44-pin breakout communication cable data” on page 6.41 for more information.

Headphones can be used if preferred, via connection through the external amplifier headphone socket.

It is also possible to use self-powered PC style monitor speakers if an external amplifier and high quality monitoring speakers are not available.

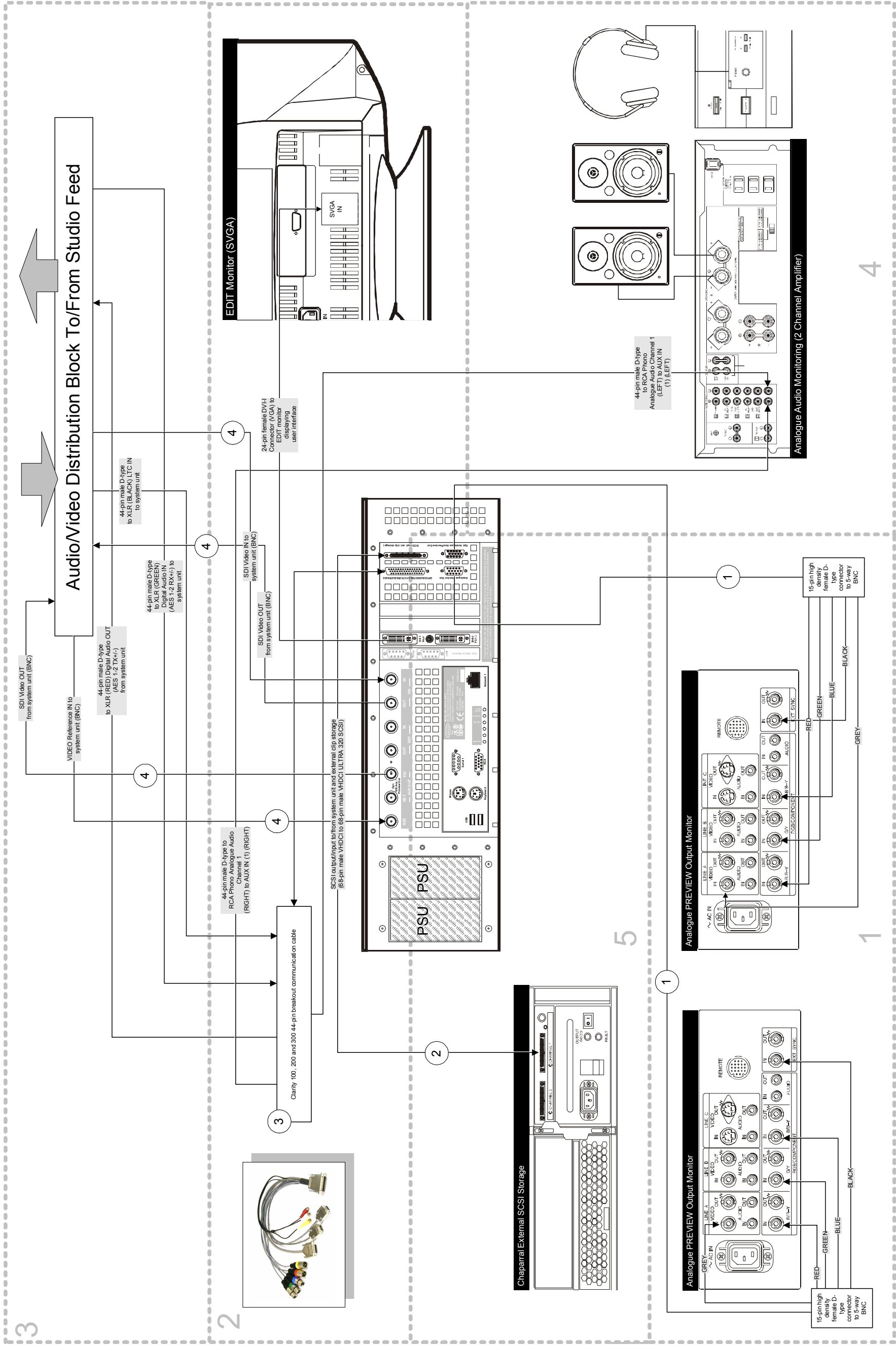
8.2.5 External video/audio clip storage (5)

The external clip storage unit (Chaparral) is connected to the system unit via a 68-pin male VHDCI to 68-pin male VHDCI cable. This cable is supplied when an external storage option is purchased. It is also available from specialised IT consumable outlets such as Lindy (www.lindy.co.uk). The Lindy part number for the cable is 30733.

Refer to “18.1.2 Chaparral 2RU external storage” on page 18.2 for more information.

9. Clarity 300 STYLE A Connection Schematic

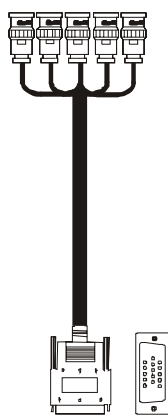
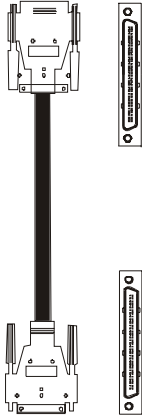
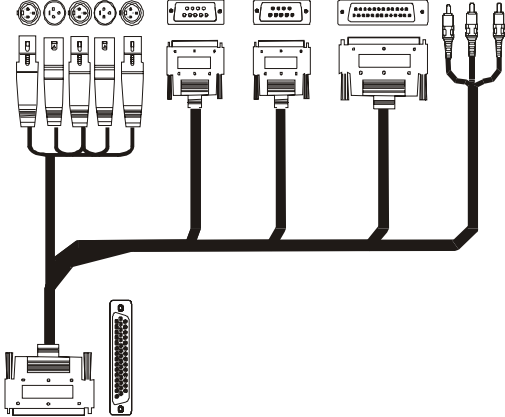

[CLARITY]



9.1 Audio, video and data cabling identification

The table below will help you identify and if necessary, purchase the audio, video and data cables necessary for connecting your system unit in the way shown in the schematic.

F-110 Audio, video and data cabling identification

| Label | Description | Quantity | Illustration |
|-------|--|----------|---|
| 1 | 15-pin male High Density D-type connector to 5-way BNC | 2 |  |
| 2 | 68-pin male VHDCI to 68-pin male VHDCI | 1 |  |
| 3 | 44-pin breakout communication cable data Refer to “6.1.4.15 Clarity 100, 200 and 300 44-pin breakout communication cable data” on page 6.41 for more information. | 1 |  |
| 4 | BNC to BNC | 4 |  |

9.2 Schematic synopsis

The Clarity 300 STYLE A system unit shown in the schematic is equipped with the optional audio video clip/auxiliary output option. This adds an SDI video and key output for preview, a second HD15 connector for analog monitor output with RGB/YUV/Composite/YC and an external SCSI connector for clip storage expansion.

9.2.1 PREVIEW monitors (Analogue) (1)

Analogue monitoring is achieved via the connection of broadcast quality monitors using standard 15-pin high density male D-type connector (HD SVGA) to 5-way BNC cables between the **Analogue Monitor Out** and **Opt. Analogue Aux/Preview Out** ports on the system unit and the **RGB Component R/R**, **G/GY** and **B/BY**, Sync and **Line A Video IN** BNC connectors on the monitor rear panels.

The grey cable connected to the **Line A Video IN** BNC connector displays the key signal. This additional connection is useful for switching between the key output and the full component video output.

9.2.2

EDIT monitor(s) (Digital or Analogue) (2)

The EDIT monitor displays the software user interface for the system unit. Digital connection (to native DVI only TFT or LCD displays instead of an analogue CRT monitor) is achieved via a 24-pin DVI cable that plugs into the **DVI-1 VGA 1** port on the system unit.

If you require an analogue connection for a conventional analogue CRT monitor, you will need to use a DVI-to-SVGA adaptor. This will be supplied if a DVI capable graphics card is fitted to your system unit.

Some system units may also support a secondary EDIT monitor via a second VGA port (**DVI-1 VGA 2**). This enables the display of the Microsoft Windows operating system over two monitors.

9.2.3 AV/LTC in/out and Reference in (3)

The digital audio and video feed is supplied via a local distribution block connected to a studio A/V feed capable of transmitting and receiving SDI video streams and AES/EBU compliant digital audio. SDI video connections between the distribution block and the system unit are made using industry standard BNC to BNC cables.

Audio connection is made using the available XLR connectors on the 44-pin breakout communication cable. The connection pinouts can be used as a guide when creating the cable. Refer to “4.13.5.5 44-pin high density (HD) D-type female connector (multi-purpose)” on page 4.79 for more information. Also refer to “6.1.4.15 Clarity 100, 200 and 300 44-pin breakout communication cable data” on page 6.41 for more information.

9.2.4 Local analogue audio monitoring (4)

Local analogue audio monitoring is achieved via the connection of a 2 channel amplifier that has the facility for the connection of 2 auxiliary RCA phono inputs (**Left** and **Right**). Audio connection is made using the available RCA phono connectors on the 44-pin breakout communication cable.

The connection pinouts can be used as a guide when creating the cable. Refer to “4.13.5.5 44-pin high density (HD) D-type female connector (multi-purpose)” on page 4.79 for more information. Also refer to “6.1.4.15 Clarity 100, 200 and 300 44-pin breakout communication cable data” on page 6.41 for more information.

Headphones can be used if preferred, via connection through the external amplifier headphone socket.

It is also possible to use self-powered PC style monitor speakers if an external amplifier and high quality monitoring speakers are not available.

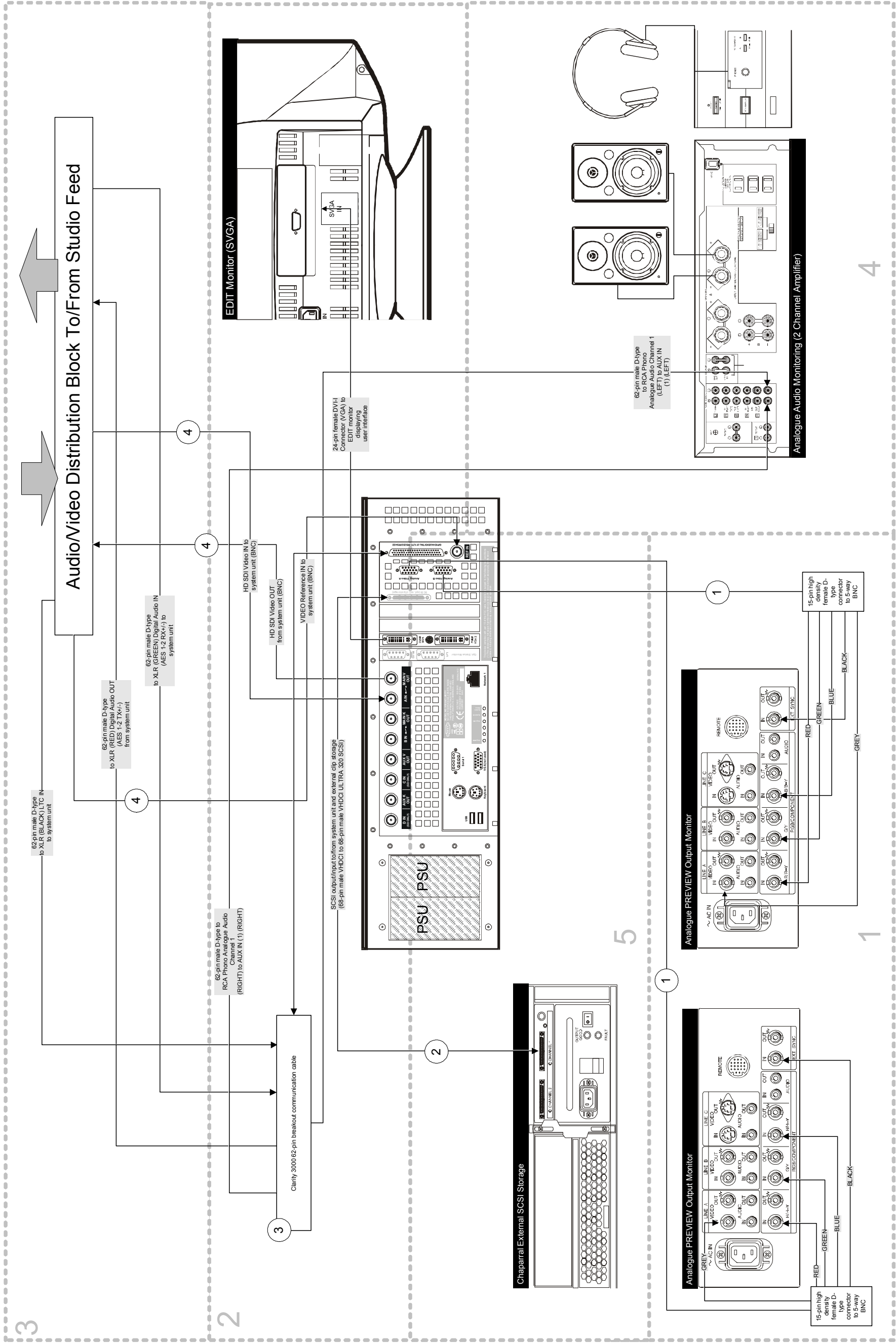
9.2.5 External video/audio clip storage (5)

The external clip storage unit (Chaparral) is connected to the system unit via a 68-pin male VHDCI to 68-pin male VHDCI cable. This cable is supplied when an external storage option is purchased. It is also available from specialised IT consumable outlets such as Lindy (www.lindy.co.uk). The Lindy part number for the cable is 30733.

Refer to “18.1.2 Chaparral 2RU external storage” on page 18.2 for more information.

10. Clarity 3000 STYLE A Connection Schematic

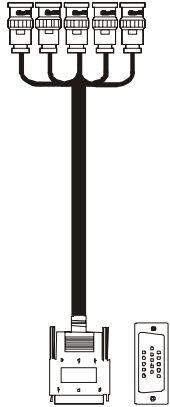
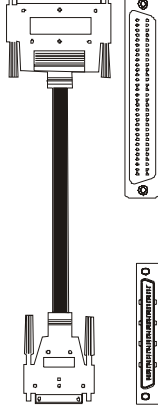

[CLARITY]



10.1 Audio, video and data cabling identification

The table below will help you identify and if necessary, purchase the audio, video and data cables necessary for connecting your system unit in the way shown in the schematic.

F-111 Audio, video and data cabling identification

| Label | Description | Quantity | Illustration |
|-------|--|----------|---|
| 1 | 15-pin male High Density D-type connector to 5-way BNC | 2 |  |
| 2 | 68-pin male VHDCI to 68-pin male D-type SCSI | 1 |  |
| 3 | 62-pin breakout communication cable data | 1 | |
| 4 | BNC to BNC | 3 |  |

10.2 Schematic synopsis

The Clarity 3000 STYLE A SD/HD system unit shown in the schematic is equipped with the optional audio and video clip options. HD SDI video signals are used in this example but the connections are the same when using SD SDI video sources/recorders.

10.2.1 PREVIEW monitors (Analogue) (1)

Analogue monitoring is achieved via the connection of two broadcast quality monitors using standard 15-pin high density male D-type connector (HD SVGA) to 5-way BNC cables between the **ANALOG VIDEO A** and **ANALOG VIDEO B** ports on the system unit and the **RGB Component R/R**, **G/GY** and **B/BY, Sync** and **Line A Video IN** BNC connectors in the monitor rear panels.

The grey cable connected to the **Line A Video IN** BNC connector displays the key signal. This additional connection is useful for switching between the key output and the full component video output.

10.2.2 EDIT monitor(s) (Digital or Analogue) (2)

The EDIT monitor displays the software user interface for the system unit. Digital connection (to native DVI only TFT or LCD displays instead of an analogue CRT monitor) is achieved via a 24-pin DVI cable that plugs into the **DVI-1 VGA 1** port on the system unit.

10.2.3 AV/LTC in/out and Reference in (3)

Channel 1’s digital audio and video feed is supplied via a local distribution block connected to a studio A/V feed capable of transmitting and receiving HD SDI video streams and AES/EBU compliant digital audio. HD SDI video connections between the distribution block and the system unit are made using industry standard BNC to BNC cables.

Audio connection is made using the Clarity 3000 62-pin breakout communication cable data. XLR to BNC adaptors are used to enable connectivity. The connection pinouts can be used as a guide when creating the cable. Refer to “[4.13.5.6 62-pin high density \(HD\) D-type female connector \(multi-purpose\)](#)” on page 4.82 for more information.

10.2.4 Local analogue audio monitoring (4)

Local analogue audio monitoring is achieved via the connection of a 2 channel amplifier that has the facility for the connection of 2 auxiliary RCA phono inputs (**Left** and **Right**). Audio connection is made using the available RCA phono connectors on the 62-pin breakout communication cable.

The connection pinouts can be used as a guide when creating the cable. Refer to “[4.13.5.6 62-pin high density \(HD\) D-type female connector \(multi-purpose\)](#)” on page 4.82 for more information.

Headphones can be used if preferred, via connection through the external amplifier headphone socket.

It is also possible to use self-powered PC style monitor speakers if an external amplifier and high quality monitoring speakers are not available.

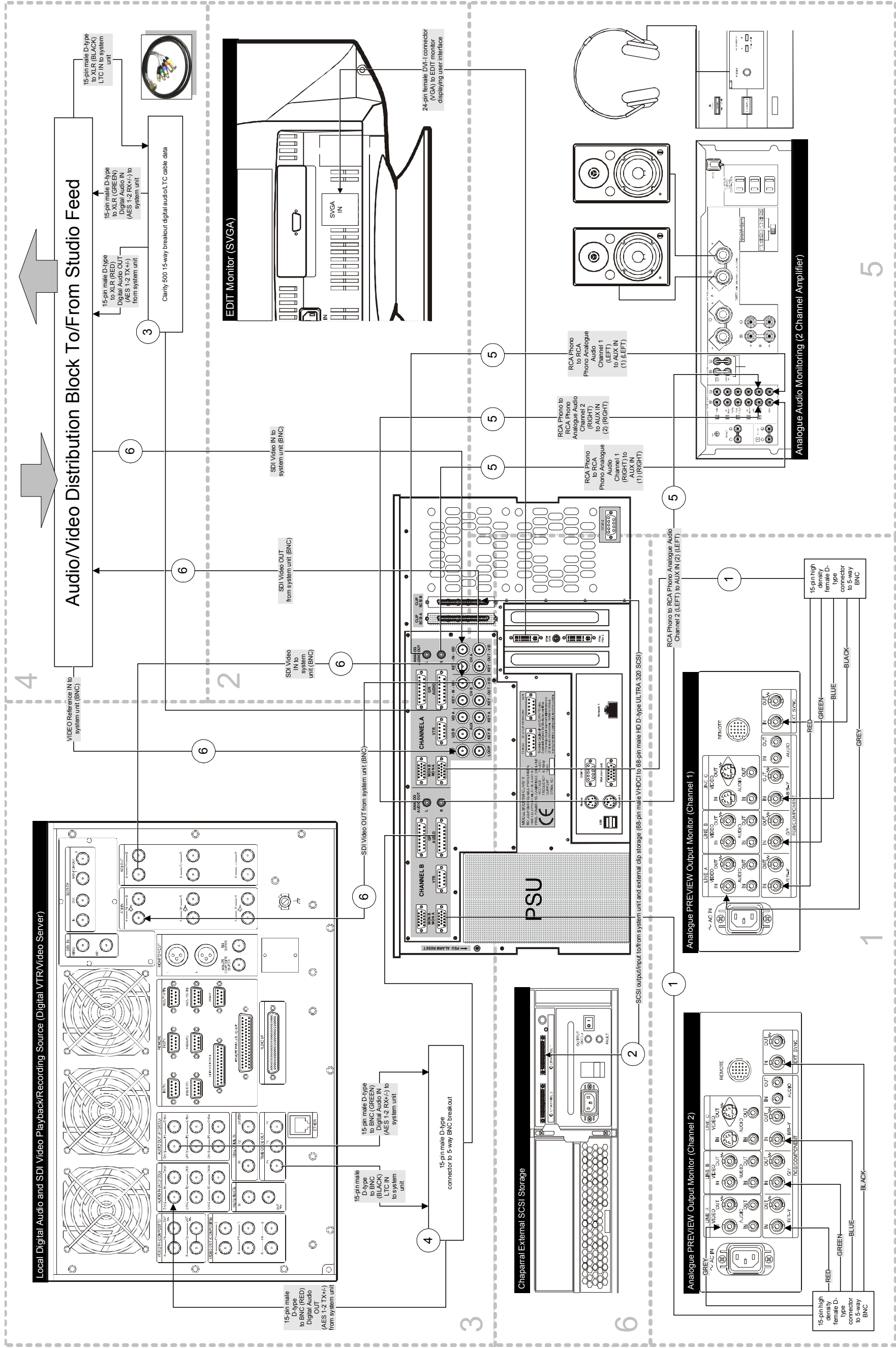
10.2.5 External video/audio clip storage (5)

The external clip storage unit (Chaparral) is connected to the system unit via a 68-pin male VHDCI to 68-pin male D-type SCSI cable. This cable is supplied when an external storage option is purchased. It is also available from specialised IT consumable outlets such as Lindy (www.lindy.co.uk). The Lindy part number for the cable is 30733.

Refer to “[18.1.2 Chaparral 2RU external storage](#)” on page 18.2 for more information.

11. Clarity 500 STYLE C Connection Schematic

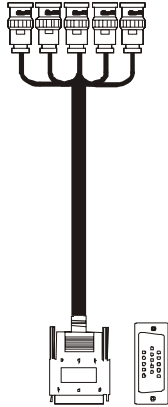
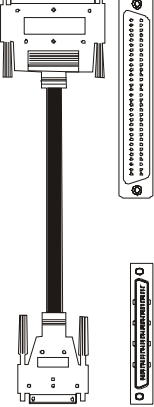
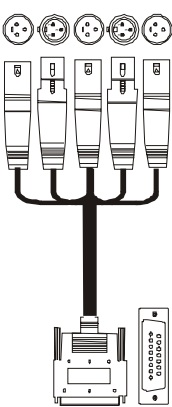
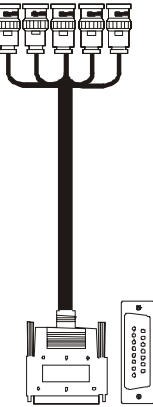


[CLARITY]



11.1 Audio, video and data cabling identification

The table below will help you identify and if necessary, purchase the audio, video and data cables necessary for connecting your system unit in the way shown in the schematic.

F-112 Audio, video and data cabling identification

| Label | Description | Quantity | Illustration |
|-------|---|----------|---|
| 1 | 15-pin male High Density D-type connector to 5-way BNC | 2 |  |
| 2 | 68-pin male VHDCI to 68-pin male D-type SCSI | 1 |  |
| 3 | 15-pin male D-type connector to 5-way XLR breakout Refer to “6.1.4.16 Clarity 500 15-way breakout digital audio/LTC cable data” on page 6.45 for more information. | 1 |  |
| 4 | 15-pin male D-type connector to 5-way BNC breakout | 1 |  |
| 5 | RCA Phono to RCA Phono | 4 |  |
| 6 | BNC to BNC | 5 |  |

11.2 Schematic synopsis

The Clarity 500 STYLE C SD system unit shown in the schematic is equipped with the optional audio and video clip options.

11.2.1 PREVIEW monitors (Analogue) (1)

Analogue monitoring for both channels is achieved via the connection of two broadcast quality monitors using standard 15-pin high density male D-type connector (HD SVGA) to 5-way BNC cables between the **MON A** ports on the system unit and the **RGB Component R/R****Y**, **G/G****Y** and **B/B****Y**, **Sync** and **Line A Video IN** BNC connectors in the monitor rear panels.

The grey cable connected to the **Line A Video IN** BNC connector displays the key signal. This additional connection is useful for switching between the key output and the full component video output.

11.2.2 EDIT monitor(s) (Digital or Analogue) (2)

The EDIT monitor displays the software user interface for the system unit. Digital connection (to native DVI only TFT or LCD displays instead of an analogue CRT monitor) is achieved via a 24-pin DVI cable

that plugs into the **DVI-1 VGA 1** port on the system unit.

If you require an analogue connection for a conventional analogue CRT monitor, you will need to use a DVI-to-SVGA adaptor. This will be supplied if a DVI capable graphics card is fitted to your system unit.

Some system units may also support a secondary EDIT monitor via a second VGA port (**DVI-1 VGA 2**). This enables the display of the Microsoft Windows operating system over two monitors.

11.2.3 Channel 2 A/V/LTC in/out (3)

Channel 2’s digital audio and video feed is supplied via a digital VTR or video server capable of transmitting and receiving SDI video streams and AES/EBU compliant digital audio. SDI video connections between the VTR/Server and the system unit are made using industry standard BNC to BNC cables.

Audio connection is made using a proprietary 15-pin male standard density D-type connector to 5-way BNC cable. The connection pinouts can be used as a guide when creating the cable. Refer to “4.13.4.7 15-pin standard density (SD) D-type female connector (Audio)” on page 4.75 for more information. Also refer to “6.1.4.16 Clarity 500 15-way breakout digital audio/LTC cable data” on page 6.45 for more information.

11.2.4 Channel 1 A/V/LTC in/out (4)

Channel 1’s digital audio and video feed is supplied via a local distribution block connected to a studio A/V feed capable of transmitting and receiving SDI video streams and AES/EBU compliant digital audio. SDI video connections between the distribution block and the system unit are made using industry standard BNC to BNC cables.

Audio connection is made using a proprietary 15-pin male standard density D-type connector to 5-way XLR cable. The connection pinouts can be used as a guide when creating the cable. Refer to “4.13.4.7 15-pin standard density (SD) D-type female connector (Audio)” on page 4.75 for more information. Also refer to “6.1.4.16 Clarity 500 15-way breakout digital audio/LTC cable data” on page 6.45 for more information.

11.2.5 Local analogue audio monitoring (5)

Local analogue audio monitoring for both channels is achieved via the connection of a 2 channel amplifier that has the facility for the connection of 2 auxiliary RCA phono inputs (**Left** and **Right**). Connection between the system unit and the amplifier is made using standard RCA phono to RCA phono cables. Headphones can be used if preferred, via connection through the external amplifier headphone socket.

It is also possible to use self-powered PC style monitor speakers if an external amplifier and high quality monitoring speakers are not available.

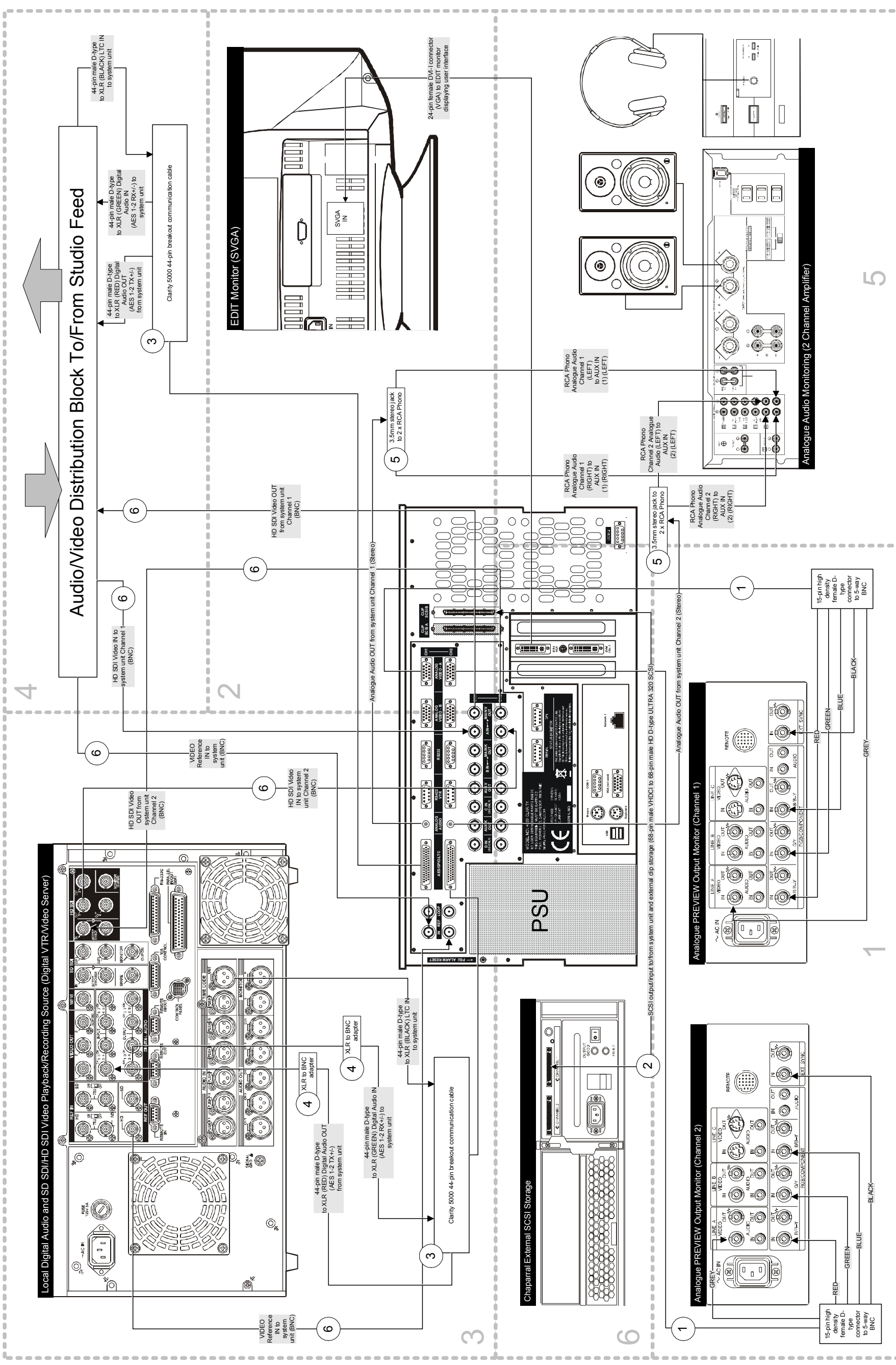
11.2.6 External video/audio clip storage (6)

The external clip storage unit (Chaparral) is connected to the system unit via a 68-pin male VHDCI to 68-pin male D-type SCSI cable. This cable is supplied when an external storage option is purchased. It is also available from specialised IT consumable outlets such as Lindy (www.lindy.co.uk). The Lindy part number for the cable is 30733.

Refer to “18.1.2 Chaparral 2RU external storage” on page 18.2 for more information.

12. Clarity 5000 STYLE A Connection Schematic

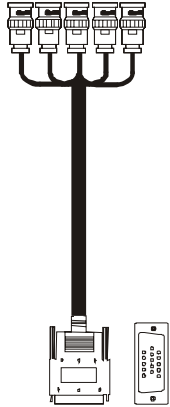
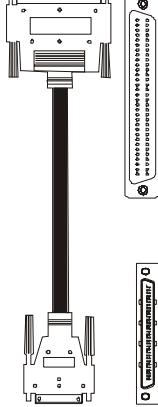
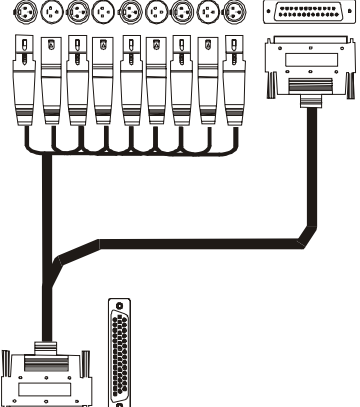



[CLARITY]



12.1 Audio, video and data cabling identification

The table below will help you identify and if necessary, purchase the audio, video and data cables necessary for connecting your system unit in the way shown in the schematic.

F-113 Audio, video and data cabling identification

| Label | Description | Quantity | Illustration |
|-------|--|----------|---|
| 1 | 15-pin male High Density D-type connector to 5-way BNC | 2 |  |
| 2 | 68-pin male VHDCI to 68-pin male D-type SCSI | 1 |  |
| 3 | 44-pin breakout communication cable data Refer to “6.1.4.17 Clarity 5000 44-pin breakout communication cable data” on page 6.46 for more information. | 2 |  |
| 4 | XLR (male and female) to BNC adapters | 2 |  |
| 5 | 3.5mm stereo jack plug to 2 x RCA Phono | 2 |  |
| 6 | BNC to BNC | 6 |  |

12.2 Schematic synopsis

The Clarity 5000 STYLE A SD/HD system unit shown in the schematic is equipped with the optional audio and video clip options. HD SDI video signals are used in this example but the connections are the same when using SD SDI video sources/recorders.

12.2.1 PREVIEW monitors (Analogue) (1)

Analogue monitoring for both channels is achieved via the connection of two broadcast quality monitors using standard 15-pin high density male D-type connector (HD SVGA) to 5-way BNC cables between the **ANALOG VIDEO A** ports on the system unit and the **RGB Component R/R_Y, G/G_Y and B/B_Y, Sync** and **Line A Video IN** BNC connectors in the monitor rear panels.

The grey cable connected to the **Line A Video IN** BNC connector displays the key signal. This additional connection is useful for switching between the key output and the full component video output.

12.2.2 EDIT monitor(s) (Digital or Analogue) (2)

The EDIT monitor displays the software user interface for the system unit. Digital connection (to native DVI only TFT or LCD displays instead of an analogue CRT monitor) is achieved via a 24-pin DVI cable that plugs into the **DVI-1 VGA 1** port on the system unit.

If you require an analogue connection for a conventional analogue CRT monitor, you will need to use a DVI-to-SVGA adaptor. This will be supplied if a DVI capable graphics card is fitted to your system unit. Some system units may also support a secondary EDIT monitor via a second VGA port (**DVI-1 VGA 2**). This enables the display of the Microsoft Windows operating system over two monitors.

12.2.3 Channel 2 A/V/LTC in/out (3)

Channel 2’s digital audio and video feed is supplied via a digital VTR or video server capable of transmitting and receiving HD SDI video streams and AES/EBU compliant digital audio. HD SDI video connections between the VTR/Server and the system unit are made using industry standard BNC to BNC cables.

Audio connection is made using the Clarity 5000 44-pin breakout communication cable data. XLR to BNC adaptors are used to enable connectivity. The connection pinouts can be used as a guide when creating the cable. Refer to “4.13.5.5 44-pin high density (HD) D-type female connector (multi-purpose)” on page 4.79 for more information. Also refer to “6.1.4.17 Clarity 5000 44-pin breakout communication cable data” on page 6.46 for more information.

12.2.4 Channel 1 A/V/LTC in/out (4)

Channel 1’s digital audio and video feed is supplied via a local distribution block connected to a studio A/V feed capable of transmitting and receiving HD SDI video streams and AES/EBU compliant digital audio. HD SDI video connections between the distribution block and the system unit are made using industry standard BNC to BNC cables.

Audio connection is made using the Clarity 5000 44-pin breakout communication cable data. XLR to BNC adaptors are used to enable connectivity. The connection pinouts can be used as a guide when creating the cable. Refer to “4.13.5.5 44-pin high density (HD) D-type female connector (multi-purpose)” on page 4.79 for more information. Also refer to “6.1.4.17 Clarity 5000 44-pin breakout communication cable data” on page 6.46 for more information.

12.2.5 Local analogue audio monitoring (5)

Local analogue audio monitoring for both channels is achieved via the connection of a 2 channel amplifier that has the facility for the connection of 2 auxiliary RCA phono inputs (**Left** and **Right**). Connection between the system unit and the amplifier is made using standard 3.5mm stereo jack plug to 2 x RCA Phono cables. Headphones can be used if preferred, via connection through the external amplifier headphone socket.

It is also possible to use self-powered PC style monitor speakers if an external amplifier and high quality monitoring speakers are not available.

12.2.6 External video/audio clip storage (6)

The external clip storage unit (Chaparral) is connected to the system unit via a 68-pin male VHDCI to 68-pin male D-type SCSI cable. This cable is supplied when an external storage option is purchased. It is also available from specialised IT consumable outlets such as Lindy (www.lindy.co.uk). The Lindy part number for the cable is 30733.

Refer to “18.1.2 Chaparral 2RU external storage” on page 18.2 for more information.

13. Software Installation and Upgrade

This chapter explains how to install the DK2 DESKey licensing software and CG Tools software on the Clarity system unit or PC that will run the Clarity PREP or Clarity Plugin software. It also explains how to install the additional Microsoft® Windows® Services for UNIX software to enable connectivity between Clarity system units, PC's running the Clarity PREP and Pixel Power proprietary hardware system units (Collage and Graphite).

If you have purchased a Clarity system unit, it is delivered pre-installed with the latest DK2 DESKey Client licensing software and CG Tools (Clarity) software. There is no need to re-install the software after physically installing the unit and starting it up. To learn more about finding your way around your new Clarity system unit, refer to “14. Basics” on page 14.1 for more information.

13.1 Installation folder structure

An installation of the CG Tools software results in the creation of the following folder structure within your selected installation path.

The default installation folder is:

[C:\Program Files\Pixel Power Ltd](#)

The following files and folders are installed within the Pixel Power Ltd. folder. Files or folders that are created by a software operation that is subsequent to the CG Tools software installation are highlighted with shading.

T-61 CG Tools version 7 onwards installation folder structure

| Path/Folder | Description | | |
|-------------|---|---------------------------------------|--|
| | Sub-Folder | Files | Description |
| Bin | Repository for CG Tools ancillary applications. | | |
| | | Chyron Remote Server_SysTray.exe | Converts Chyron Infinite remote control protocol commands supplied via a serial communications port into Clarity DCOM network control calls. |
| | | Clarity XML Serial Server_SysTray.exe | Application for parsing Clarity XML protocol commands via a serial port. |
| | | ClarityCOM15.exe | Microsoft compatible COM object giving the ability to update data and control a Clarity system unit using the Clarity XML protocol. |
| | | ClarityCOM15.tlb | |
| | | RapidRecallKeypad.exe | Enables RapidRecall Keypad control of Clarity system units by enabling a DCOM connection to be created and maintained between a Clarity system unit and a PC that has a RapidRecall keypad connected to an available RS232 serial port or Ethernet network port. |
| | | Socket Server App.exe | Application for parsing Clarity XML protocol commands via TCP/IP socket. |

13. Software Installation and Upgrade

| Path/Folder | Description | | |
|-----------------|--|--|--|
| | Sub-Folder | Files | Description |
| CG Tools 7.1 | Repository for CG Tools software executable and associated application resource files. | | |
| | AutoSaves | Files written when required. | Automatically saved versions of any jobs that have been worked on. |
| | Configurations | Legacy folder; not currently used. | |
| | Custom Animations | Files written when required. | Custom animation text files are written to this folder when they are created within the CG Tools application. |
| | Defaults | Repository for various CG Tools software default settings. | |
| | | DefaultMapping.txt | Default font mapping shipped with the software. This maps the standard 500 Bitstream fonts shipped with Collage to TrueType equivalents on the Windows local system running the CG tools software. |
| | | Dictionary.txt | Default CG Tools software dictionary. |
| | Documents | Repository for CG Tools documentation. | |
| | | H059W002.pdf | Adobe Acrobat PDF version of the Clarity and Clarity PREP Quick Start Guide. |
| | | H059W003.pdf | Adobe Acrobat PDF version of the Clarity Installation, Operational Testing and Maintenance Manual. |
| | | H059W004.chm | HTMLHelp version of the CG Tools Online Help/Reference Manual. |
| | | H059W004.pdf | Adobe Acrobat PDF version of the CG Tools Online Help/Reference Manual. |
| | | XMLHelpIDMap.xml | Help ID map file for the CG Tools software. |
| | Driver | <i>Numerous files (descriptions not required).</i> | System hardware drivers. These are only present when you have chosen to install the Clarity software product. |
| | Hardware | <i>Numerous files (descriptions not required).</i> | System hardware files. These are only present when you have chosen to install the Clarity software product. |
| | Job Fonts | <i>Files written when required.</i> | Repository for any fonts that are required by copied jobs that are not already installed on the local system. |
| | Smart Cache | <i>Files written when required.</i> | When Smart Moves are rendered, they are saved directly to disk and will stay there until they are needed i.e. they do not need to be re-rendered each time the job is loaded. |
| | SubFiles | <i>Numerous files.</i> | Miscellaneous CG Tools sub-files. These include Collage drive map configuration, supported Code Pages and extended keyboard mapping files. |
| | Wallpaper | Repository for Pixel Power desktop wallpapers saved in various resolutions. Only present when you have chosen to install the Clarity software product. | |
| CG Tools Config | | <i>Numerous files (descriptions not required).</i> | Miscellaneous CG Tools configuration files including local copies of the user management XML configuration files, dongle configuration files etc. |

| Path/Folder | Description | | |
|---------------------------|-------------|--|---|
| | Sub-Folder | Files | Description |
| CG Tools Shared | | <i>Numerous files (descriptions not required).</i> | Miscellaneous CG Tools shared files. |
| Format Conversion | | <i>Numerous files.</i> | Video and audio conversion tools. |
| Lead Tools | | <i>Numerous files (descriptions not required).</i> | Image processing resources. |
| Misc Shared | | <i>Numerous files (descriptions not required).</i> | Miscellaneous shared files. |
| PixelPowerApplicationLogs | | <i>Numerous files and sub-folders (descriptions not required).</i> | Logs for Pixel Power CG Tools software derivatives and system hardware. |

13.2 Program group structure

An installation of the CG Tools software results in creation of some OR all of the following structure within your selected program group in the Microsoft® Windows® Start menu.

The default installation program group is:

<C:\Documents and Settings\All Users\Start Menu\Programs\Pixel Power Ltd>

T-62 CG Tools version 7 onwards program group structure

| Folder | Description | |
|-----------------|--|---|
| | Files | Description |
| Pixel Power Ltd | Repository for CG Tools and documentation program shortcuts. | |
| | Chyron Remote Control Server.lnk | Link to Chyron Remote Server_SysTray.exe. |
| | Clarity 7.1 (Reprogram Hardware).lnk | Link to Clarity.exe (with additional command line switches to re-program Clarity system hardware). Starts the Clarity software derivative of the CG Tools software. |
| | Clarity 7.1.lnk | Link to Clarity.exe. Starts the Clarity software derivative of the CG Tools software. |
| | Clarity Prep 7.1.lnk | Link to Clarity.exe. Starts the Clarity PREP software derivative of the CG Tools software. |
| | Maintenance Manual.lnk | Link to Adobe Acrobat PDF version of the Clarity Installation, Operational Testing and Maintenance Manual. |
| | Online Help.lnk | Link to HTMLHelp version of the CG Tools Online Help/Reference Manual. |
| | Rapid Recall Keypad - Playout Control Server.lnk | Link to RapidRecallKeypad.exe. |
| | Reference Manual.lnk | Link to Adobe Acrobat PDF version of the CG Tools Online Help/Reference Manual. |
| | XML Socket Server.lnk | Link to Socket Server App.exe. |

13. Software Installation and Upgrade

13.3 CG Tools software licensing

13.3.1 Clarity licensing

Each system is accompanied with a single blue USB licence dongle which is valid for only that system. It should be plugged into an available USB port on the system front or rear panel. The system is pre-installed with the latest CG Tools software and a client version of the DK2 DESkey software and thus requires **NO FURTHER** software installation.



To learn more about DK2 DESKey licensing software configuration, refer to [“13.5 Managing the DK2 DESKey software”](#) on page 13.11 for more information.

On Clarity 300 systems, the USB dongle is pre-installed inside the system chassis during production.

13.3.2 Clarity PREP and Clarity Plugin licensing

When purchasing multiple copies of Clarity PREP or Clarity Plugin, you had the option to a) purchase single licences for each copy (one physical licence dongle per copy) or b) purchase a single floating licence for multiple copies (one physical licence dongle for all copies).

If you have chosen the first option and are in receipt of multiple dongles, refer to [“13.4 CG Tools software installation”](#) on page 13.6 for more information. A client version of the DK2 DESkey licensing software is installed as part of each CG Tools software installation.

If you have chosen the second option and are in receipt of a single dongle, this dongle should be installed on a machine enlisted to be the licence server machine.

This machine should be accessible via the local area network from all machines running the Clarity PREP or Clarity Plugin software. Speak to your IT or networking manager for more information.

The machine enlisted as the network licence server must be installed with the following:

- the single blue USB licence dongle;
- a copy of the DK2 DESKey Network Server licensing software.

The subsequent section details how to install the DK2 DESKey Network Server software on the machine enlisted as the network licence server.



13.3.2.1 DK2 DESKey Network Server software installation

If you are updating an existing installation, there is no requirement to un-install the previous version first.

13.3.2.1.1 Insert media

Insert the installation media supplied (the CG Tools installation CD-ROM) and run the DNSRV32 . EXE program located in the DONGLE folder. The **DK2 DESKey Network Server** installation should run.

13.3.2.1.2 DK2 DESKey Network Server installation

1. Read the licence information, then select **Next** to accept the licence agreement.
2. Select **Next** to accept the default installation path or select **Browse** to navigate to a location where you want to install the software. Select the installation directory, then select **Next**.

If you have previous version installed and the DK2 DESKey Network Server Windows service is currently running, a message appears requesting that the service must be stopped. Select **Yes** to stop

the service and continue the installation.

3. The installation process begins. When it is complete, a dialog box is displayed asking if you want to start the licence server. Select **Yes** to start the licence server service or **No** to start it manually later.
4. Select **Finish** to complete the installation.

Make a note of the network name of this machine as it will be required during the DK2 DESKey Client software installation on machines being installed with the CG Tools software. To learn more about starting and configuring the DK2 DESKey licensing software, refer to [“13.5 Managing the DK2 DESKey software”](#) on page 13.11 for more information.

13.3.3 How are software features controlled?

Each dongle that is supplied with Clarity systems and the Clarity PREP or Clarity Plugin software is programmed exclusively to offer software features chosen by each customer. Each dongle is assigned an exclusive identification number which should be recorded as it may be requested by Pixel Power technical support.

The identification number, software support renewal date and software features applicable to the current licence dongle can be displayed using the **Licence>Show Features** menu command. The **Supported Features** dialog box is displayed. If at some point after purchasing, you decide that you would like to purchase additional software features to improve the CG Tools feature set, you can do so by contacting Pixel Power technical support. After discussing the options available and upon receiving payment, you will receive a new licence dongle code that will enable the chosen new features.

You may also be required to upgrade your CG Tools software so that new feature(s) can be enabled. It is important to note you must have a valid current software support agreement currently in operation. This is available free for a 15 month period from the date of despatch from the relevant Pixel Power premises. Refer to [“22.2 Contacting Pixel Power for support and other enquires”](#) on page 22.1 for more information.

The renewal date is shown on the **Supported Features** dialog box. After this date, an additional term must be purchased in order to receive and install free software updates. After receiving the code, select **Licence>Show Features** to display the **Licence Entry** dialog box. Copy the code from the email into the dialog box and select **OK**.

Some new features may only be available after the relevant CG Tools software product has been re-started.

13.3.4 What happens when my software support agreement ends?

Each CG Tools software product features a stored software support expiry date. This date is exactly 15 months from the date of despatch from the relevant Pixel Power premises. Refer to [“22.2 Contacting Pixel Power for support and other enquires”](#) on page 22.1 for more information. The expiry date prevents any software created after that date from running. The expiry date is shown on the **Supported Features** dialog box which can be displayed by selecting **Licence>Show Features**.

To renew your software support agreement, contact Pixel Power technical support. After discussing the options available and upon receiving payment, you will receive a new licence dongle code that will enable any subsequent software upgrades to install and function correctly. After receiving the code, select **Licence>Show Features** to display the **Licence Entry** dialog box. Copy the code from the email into the dialog box and select **OK**.

Once the software support expiry date is reached, the ability to install and run upgrades is revoked until a further support package is purchased.

13. Software Installation and Upgrade

13.4 CG Tools software installation

These instructions are intended to guide the user through the installation of all products in the Pixel Power CG Tools family.

It is recommended that you read through these instructions once before commencing the installation procedure.

13.4.1 Preparation

Before you start you should have the following information and items:

- a copy of the installation media (CDROM, ZIP file etc.);
- you should have a blue USB licence dongle which should be installed on the local machine or system, or know the name of the machine on the network that will act as your dongle licence server.

If you are installing a demonstration version, a dongle or a licence server is not required. Software functionality is limited in demonstration mode.

13.4.2 What type of Clarity system do I have? [CLARITY]

If you are upgrading the software on a Clarity system unit, you should know what type of unit you have.

13.4.2.1 Single Channel SD

If your system unit is capable of simultaneously outputting a single channel of standard definition video, but no high definition video.

If you have previous versions of the software installed, this setup will have been displayed as a single icon on the desktop labelled Clarity vn.n.

13.4.2.2 Single Channel HD

If your system unit is only capable of outputting a single channel of high definition video, but no standard definition video.

If you have previous versions of the software installed, this setup will have been displayed as a single icon on the desktop labelled Clarity vn.n.

13.4.2.3 Dual Channel HD

If your system unit is capable of outputting two simultaneous channels of high definition video, but no standard definition video.

If you have previous versions of the software installed, this setup will have been displayed as a single icon on the desktop labelled Clarity vn.n.

13.4.2.4 Dual Channel SD

If your system unit is capable of outputting two simultaneous channels of standard definition video, but no high definition video.

If you have previous versions of the software installed, this setup will have been displayed as a single icon on the desktop labelled Clarity vn.n.

13.4.2.5 Single Channel HD/Dual Channel SD

If your system unit is capable of simultaneously outputting a single channel of high definition video and two channels of standard definition video.

If you have previous versions of the software installed, this setup will have been displayed as a single icon on the desktop labelled Clarity vn.n.

13.4.2.6 Single Channel HD/Dual Channel SD Switchable

If your system unit is capable of outputting either a single channel of high channel or two channels of standard definition video, but not SD and HD simultaneously.

If you have previous versions of the software installed, this setup will have been displayed as a two icons on the desktop labelled Clarity SD vn.n and Clarity HD vn.n.

13.4.3 Choosing an offline preparation product to install [PREP][PLUGIN]

If you are installing the software on a normal PC for the offline preparation of Clarity jobs, or for generation of media for use in other video graphics environments, then you need to know what version of the software you want to install. You have the following options:

13.4.3.1 Clarity PREP

If you will be using the software to prepare or edit jobs played out on Pixel Power Clarity hardware character generators or if you wish to use the software to produce content for use with any of Pixel Powers' hardware products and/or generate graphic content for use with other video editing/graphic products e.g. Avid® Media Composer®, you require this version of the software.

This version can only run in YUV, but has no other features disabled. This version does not set up any Collage drive or font mappings by default.

13.4.3.2 Clarity Plugin

If you want to make use of the plugin available for use with Avid® PC based editing products e.g. Symphony™, Media Composer®, NewsCutter® and XPress DV®, then you need to install this product.

13.4.4 Clarity PREP or Clarity Plugin [PREP][PLUGIN]

The technical specification of the PC on which the CG Tools software is to be installed should at least meet the minimum requirements set out earlier in the manual.

Refer to [“6.2.3 PC specification”](#) on page 6.49 for more information.

13.4.5 Locating the AVX plug-in folder [PLUGIN]

If you are installing the Avid AVX Plugin product, you will need to know the location of the AVX plugin folder for the compatible application you have installed i.e. Symphony™, Media Composer®, NewsCutter® and XPress DV®. This folder is likely to be one of the following:

```
C:\Avid\AVX_Plug-ins
C:\Program Files\Avid\AVX_Plug-ins
D:\Avid\AVX_Plug-ins
D:\Program Files\Avid\AVX_Plug-ins
```

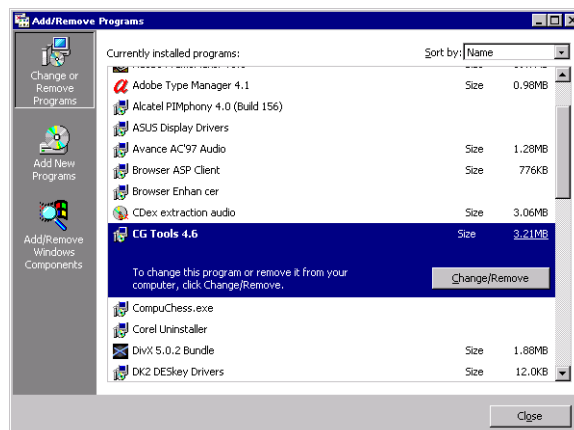
Once you have all of the above information, you should check to see if any previous versions of the software are installed. If they are, then refer to [“13.4.6 Un-installing older software versions”](#) on page 13.8 for more information. If they are not, refer to [“13.4.7 Installation”](#) on page 13.9 for more information.

13. Software Installation and Upgrade

13.4.6 Un-installing older software versions

If you have any old versions of Clarity or Clarity PREP on the machine, it is highly recommended that you un-install all of them before proceeding with the installation. To un-install all previous versions, follow the steps below:

1. Select **Start>Settings>Control Panel**. The **Control Panel** is displayed.
2. Select **Add/Remove Programs** from the **Control Panel**. The **Add Remove Programs** dialog box is displayed.



3. From within the **Add/Remove Programs** dialog box, select the first CG Tools, Collette or Clarity entry from the list of installed programs, then select **Change/Remove**.
4. From the resulting install shield dialog box, select **Remove** and then **Next**. The un-installation starts.

When the un-installation is complete DO NOT re-boot until:

- a) you have checked that there are no other versions of the software installed. If there are, repeat the above process for those versions of software.
- b) there are no versions of any DK2 software products (i.e **DK2 DESKey Drivers**) installed. If there are, repeat the un-install process for these software products, ignoring any errors received during un-install process.

Once all the programs have been removed, you should re-boot your machine.

13.4.7 Installation

To install the CG Tools software, follow the steps in the sections below.

13.4.7.1 Insert media

Insert the installation media supplied to you and run the `SETUP . EXE` program located in the `CGTools` folder (in some instances the `. EXE` may be located at the root of the CD-ROM). The DK2 DESKey Client software installation should run first.

13.4.7.2 DK2 DESKey Client software installation

1. Select **Next**. You have to select how you will be connecting to your licence dongle. Select one of the following options:

This Machine

Select this option if you are installing a demonstration version with no dongle supplied; or if you are installing the software on the machine with the dongle inserted.

Using a DK2 Network Server

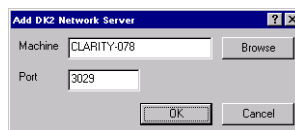
If you will be using a network based licence server, with no dongle inserted on the machine onto which you are installing the software, then select this option.

2. Select **Next**. If you selected **This Machine** in the previous step, the installation will begin.

If you selected **Using a DK2 Network Server** in the previous step, the installation will begin and the **Network Configuration** dialog box will subsequently appear.



Select **Add**. The **Add DK2 Server** appears. Enter the network name of the PC or Clarity system that you want to connect to or alternatively select **Browse** and select a network server using the standard Windows networking tree.



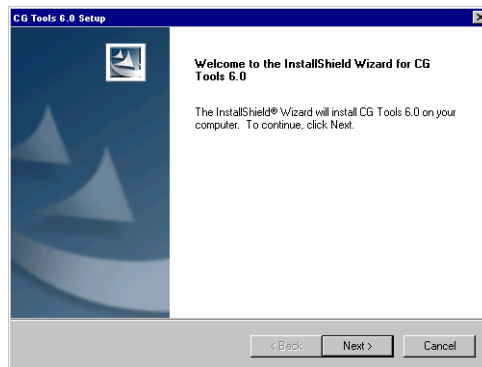
Select **OK** to return to the **Network Configuration** dialog box. Select **OK** to accept the selected server and complete the installation.

When the DK2 DESKey Client software installation is complete, you are returned to the **CG Tools** installation.

To learn more about configuring the DK2 DESKey licensing software, refer to [“13.5 Managing the DK2 DESKey software”](#) on page 13.11 for more information.

13. Software Installation and Upgrade

13.4.7.3 CG Tools installation



1. The **CG Tools** installation dialog box will take you through the following panels:

| | | |
|---|---|--|
| Introduction | 1 | Select Next . |
| License Agreement | 2 | Read the licence agreement, then select Yes to accept the licence agreement. |
| Choose Destination Location | 3 | Select Next to accept the default installation path or select Browse to navigate to a location where you want to install the software. Select the installation directory, then select Next . |
| Product Selection | 4 | In “13.4.1 Preparation” on page 13.6 you should have decided what product(s) you want to install. Select the desired products that you want to install and then select Next . Shortcuts will be created on the desktop and in the Start menu for the software products that you have selected. |
| Select AVX plugin directory Only appears if you have selected Avid AVX Plugin during product selection | 5 | If you selected to install the Avid AVX Plugin software, then you will be prompted to locate the AVX plugin directory. In “13.4.1 Preparation” on page 13.6 you should have located this directory. Select the desired AVX Plug-in directory and select Next . |
| Software Component Selection | 6 | Using the extensible component tree, check any additional software components that you want to install; clear any software components that you do not want to install. Highlighted components are described in the adjacent Description box. Select Next to continue. |
| INSTALLATION RUNS | | |
| Re-Start Machine | 7 | Select to re-start the machine and then select Finish . |

2. The machine should re-boot and the installation process is complete.

13.5 Managing the DK2 DESKey software

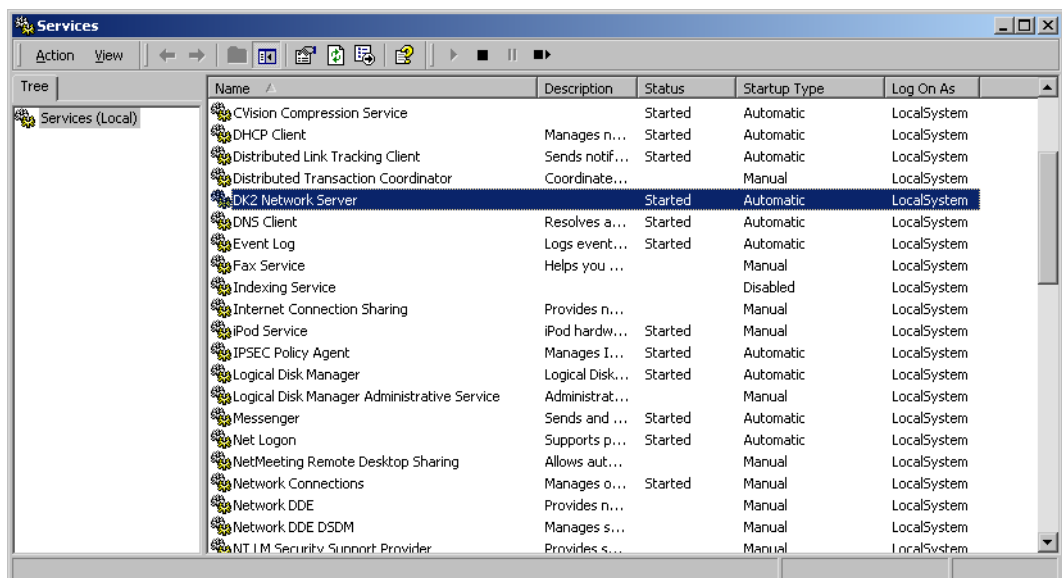
13.5.1 Starting and stopping DK2 DESKey Network Server manually

Applicable in situations where you are using a networked machine to act as a licence server for DESKey clients.

The DK2 DESKey Network Server runs as a service on the machine which is enlisted to be the licence server machine. The service can be controlled from the Administrative Tools **Services** window. To display this window:

1. On Windows 2000 systems, select **Start>Settings>Control Panel**. On Windows XP systems, select **Start>Control Panel**. The **Control Panel** window is displayed.
2. Select **Administrative Tools** from the **Control Panel** window. The **Administrative Tools** window is displayed.
3. Select **Services** to display the **Services** window.

F-114 Control Panel | Administrative Tools | Services



The service is listed as the **DK2 Network Server** and can be started or stopped in the normal manner using the **Action** menu.

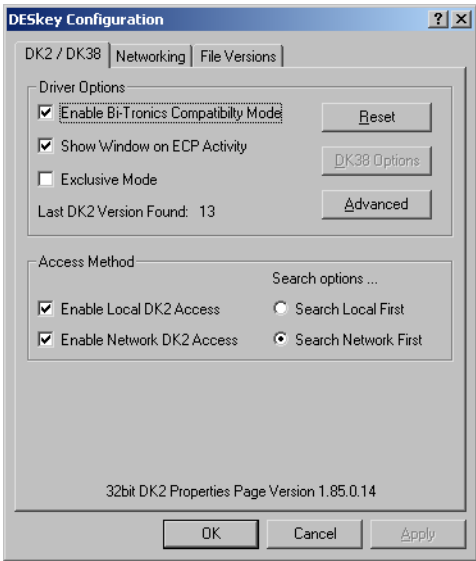
You can also stop and start the service using the controls in the **DK2 Network Server service control** group box on the **Networking** dialog tab on the **DESKey Configuration** dialog box. Refer to [“13.5.2 DK2 DESKey licensing software configuration”](#) on page 13.11 for more information.

13.5.2 DK2 DESKey licensing software configuration

The DK2 DESKey Network Server **AND** Client licensing software can be configured using the Windows **Control Panel**. Follow the steps below:

1. On Windows 2000 systems, select **Start>Settings>Control Panel**. On Windows XP systems, select **Start>Control Panel**. The **Control Panel** window is displayed.
2. Select **DESKey** from the **Control Panel** window. The **DESKey Configuration** dialog box is displayed.

F-115 DESKey Configuration dialog box | DK2/DK38 dialog tab



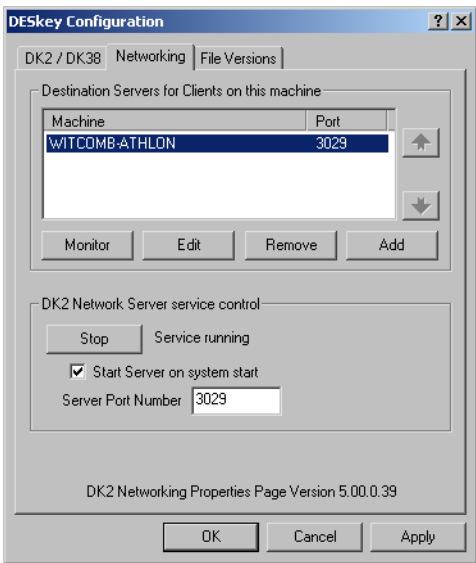
3. The controls in the **Access Method** group box on the **DK2/DK38** dialog tab can be used to select how licences are accessed.

T-63 Access Method options

| Option | Description |
|---------------------------|---|
| Enable local DK2 Access | Allow access to the DK2 using the local LPT port. |
| Enable Network DK2 Access | Allow access to the DK2 attached to a DK2 Network Server via the LAN. |
| Search Local First | Search the local LPT ports first, then search the LAN for a DK2 Network Server. |
| Search Network First | Search the LAN for a DK2 Network Server before trying local LPT ports. |

4. In situations where the networked machine on which the DK2 DESKey Network Server licensing software is installed has changed, you can update DESKey clients with a revised destination machine name and port using the controls (**Edit**, **Remove** and **Add**) on the **Networking** dialog tab.

F-116 DESKey Configuration dialog box | Networking dialog tab



13.6 Upgrading CG Tools software installations

The CG Tools software can be upgraded when a new software version becomes available. From time to time, Pixel Power Ltd. release software updates for CG Tools software derivatives to customers using software patches.

13.6.1 Important information before you begin

Please read the sections below before proceeding.

13.6.1.1 Requirements

To complete the tasks in this section, the following requirements must be fulfilled.

13.6.1.1.1 Software

FTP client software

Microsoft Internet Explorer can be used as an FTP client and is used in this section. You can also use dedicated FTP client software. SmartFTP® is used by a number of our customers. This can be downloaded from:

<http://www.smartftp.com/download/>

ZIP archiving/un-archiving software

An archiving/un-archiving application that supports .ZIP files will be required (e.g. WINZIP) if you want to unpack a downloaded .ZIP patch file.

A 21-day evaluation version of WINZIP can be downloaded from:

<http://www.winzip.com/downwz.htm>

Pixel Power CG Tools

If you are using a Clarity system, it must be running the Clarity (CG Tools) software. If you are using a PC for offline preparation, it must be running the Clarity PREP or Clarity Plugin software (CG Tools) software.

For more information on CG Tools software derivatives, refer to “3.1.3 Current CG Tools software products” on page 3.22 for more information.

13.6.1.1.2 Hardware

A Clarity system unit is required if you are running Clarity. A PC conforming to the correct requirements is required if you are running Clarity PREP or the Clarity Plugin software (CG Tools) software. Refer to “6.2.3 PC specification” on page 6.49 for more information.

13.6.1.2 Assumptions

This section assumes that you have a:

- a) working knowledge of Microsoft® Windows® methodologies and its user interface;
- b) working knowledge of the CG Tools software.

13.7 Before continuing

Please contact Pixel Power support before attempting to update software and/or firmware to ensure that you download the correct software patch. This will reduce the possibility of installing an incorrect software patch and thus experiencing any resulting operational problems with the software or hardware.

13. Software Installation and Upgrade

13.7.1 Concepts

Patches are usually supplied as .ZIP files that can either be emailed or downloaded from our FTP site:

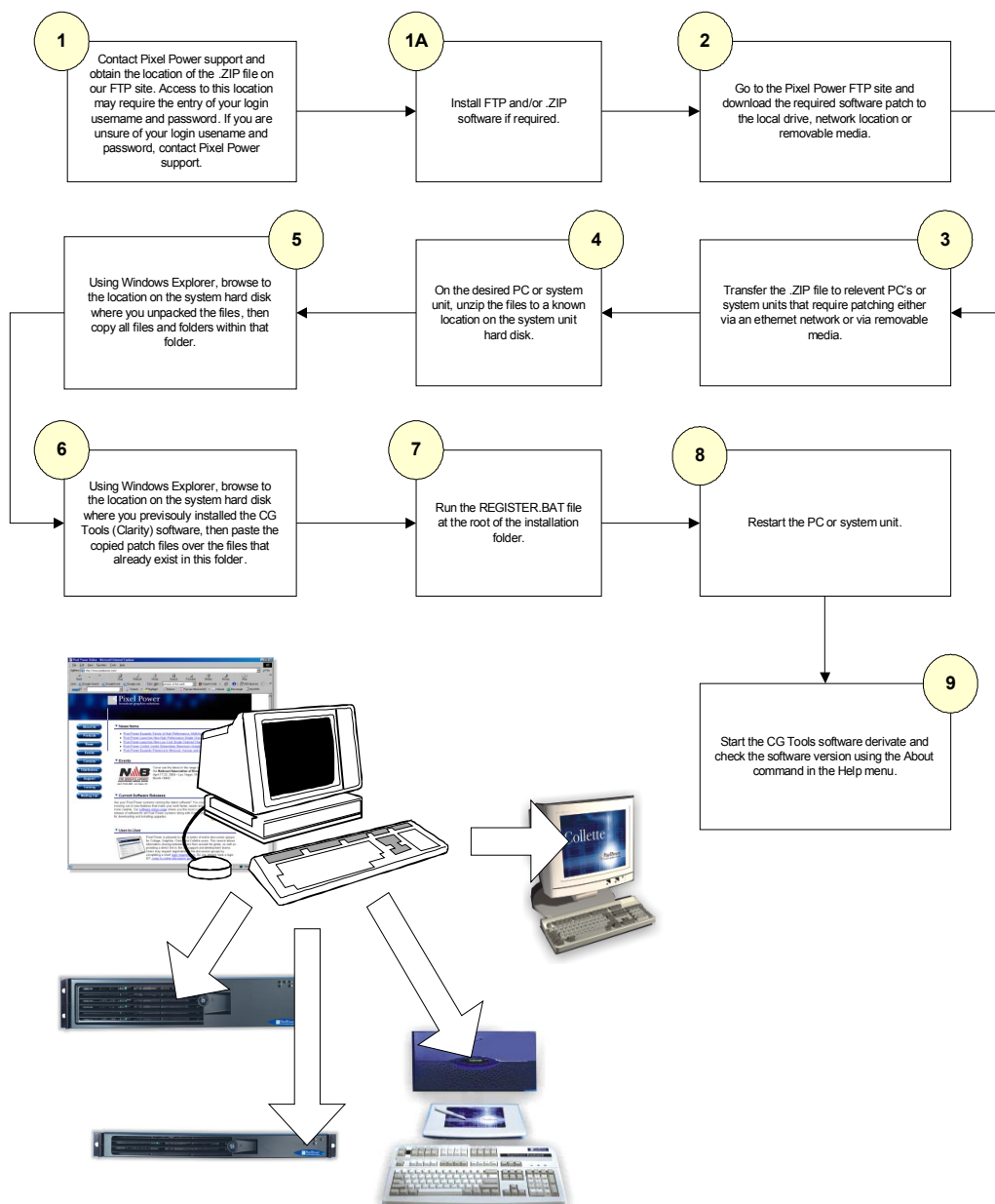
<ftp://ftp.pixelpower.com>

The .ZIP file contains a selection of files and/or folders that will overwrite existing copies located in the customers selected CG Tools installation folder.

Once copied, the systems' Windows registry is then updated to ensure that the system uses the newer application resource files.

When the chosen CG Tools software derivative is then run, it will operate using the new application resource files, thus providing access to any new features or bug fixes that are documented in the associated release note accompanying the software update patch.

F-117 Flow chart showing procedure for updating software via patches



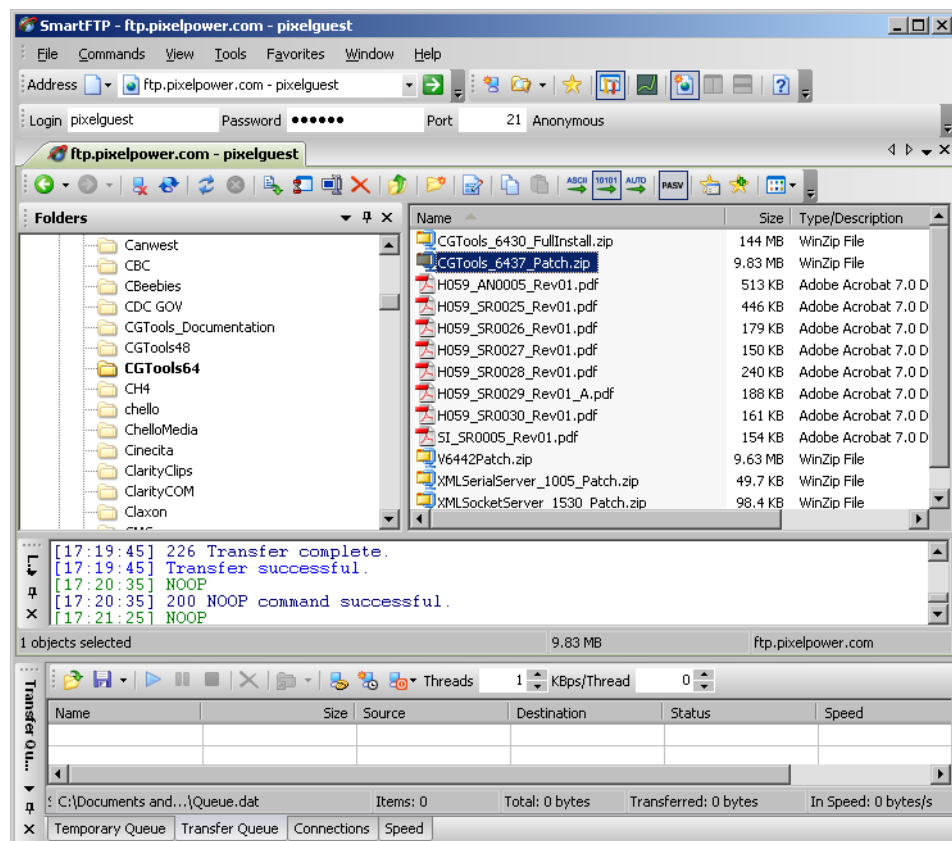
13.7.2 Downloading a software patch .ZIP file via FTP

Follow the steps below to download an update from the Pixel Power FTP site:

1. Contact Pixel Power support and obtain the location of the .ZIP file on the Pixel Power FTP site. Access to this location may require the entry of your login username and password. If you are unsure of your login username and password, contact Pixel Power support.
2. Go to <ftp://ftp.pixelpower.com> using your desired FTP client browser/software. SmartFTP® is used in this example.
3. If required, enter your login username and password.
4. Go to the desired folder as instructed by Pixel Power technical support.
5. Locate the correct .ZIP file. The name will usually take the form CGTools_nnnn_Patch.ZIP, where nnnn is the version number of the CG Tools software release.
6. Once you have located the correct .ZIP patch file, save it to a location on your hard disk e.g. C:\CG_Tools_Patches. You can do this either by dragging and dropping the file or by right-clicking and selecting **Download>Direct>Select Folder** from the shortcut menu that appears. The download may take a reasonable length of time depending on your FTP connection type and speed.

The example below shows an FTP session logged into <ftp://ftp.pixelpower.com> as PIXELGUEST on port 21. The CG_Tools_6437_Patch.ZIP patch file is located in the /guest/CGTools64 folder on our FTP site, prior to it be downloaded to C:\CG_Tools_Patches on the local system hard disk.

F-118 SmartFTP® session @ ftp://ftp.pixelpower.com using PIXELGUEST login



13. Software Installation and Upgrade

13.7.3 Distributing and unpacking software patch .ZIP files

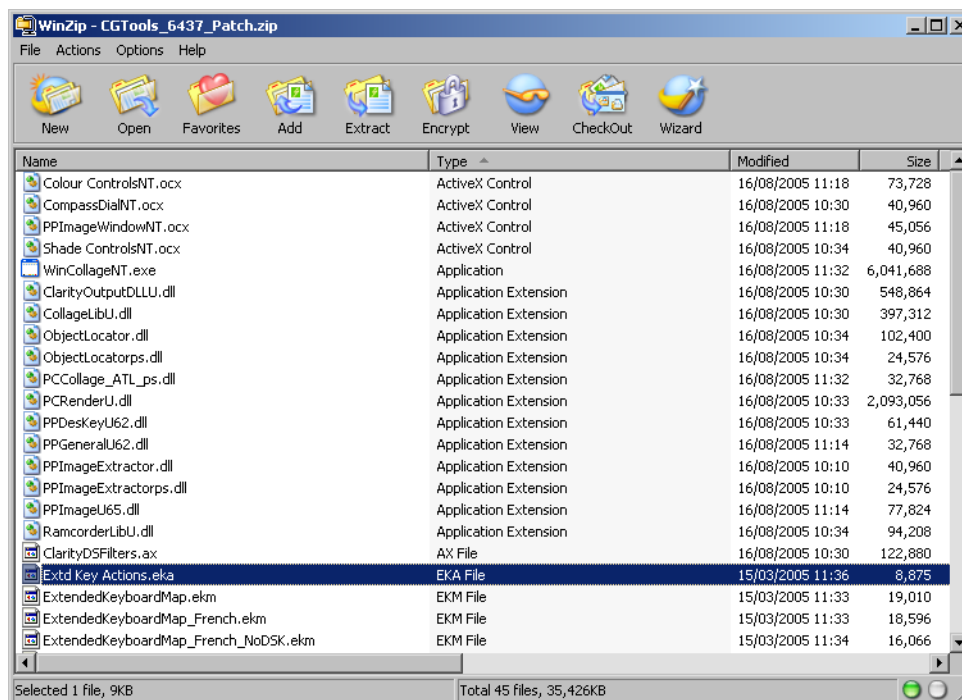
1. Download the latest .ZIP patch file from the Pixel Power FTP site. Refer to “13.7.2 Downloading a software patch .ZIP file via FTP” on page 13.15 for more information.
2. Transfer the .ZIP file to relevant PC's or system units that require patching either via an ethernet network or via CD-R.
3. On the desired PC or system unit, unzip the files to a known location (e.g. C:\CG_Tools_Patches) on the system unit hard disk. An archiving/un-archiving application that supports .ZIP files will be required e.g WINZIP. A 21-day evaluation version of WINZIP can be found at:

<http://www.winzip.com/downwz.htm>

An example using WINZIP is documented below:

- a) Browse to the location where you saved the ZIP patch file. For this example the file CG_Tools_6437_Patch.ZIP is saved in C:\CG_Tools_Patches.
- b) Double-click on the file. The file should open within the WINZIP application.

F-119 CG_Tools_6.4.3.7_Patch.ZIP open in WINZIP application



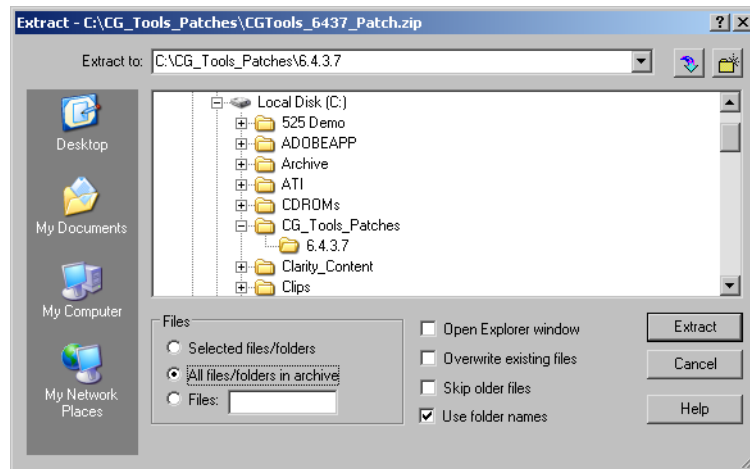
- c) Select **Extract**. The **Extract** dialog box appears.

Ensure the **Extract** text box displays the folder where you want to extract the files to. For this example, the C:\CG_Tools_Patches folder is going to be used (the same as that containing the original .ZIP files).

13. Software Installation and Upgrade

As an additional measure to aid clarification, create a folder within C:\CG_Tools_Patches called 6.4.3.7, into which the resource files will be extracted.

F-120 WINZIP Extract dialog box

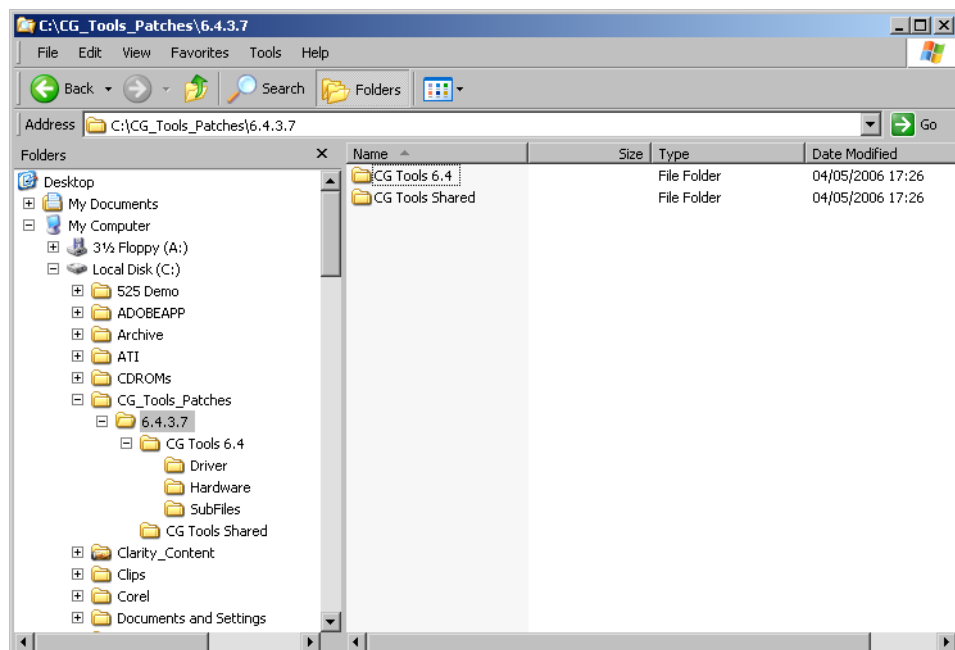


To do this, click on the **Create Folder** button, enter 6.4.3.7 as the folder name and then click on **OK**. The **Extract** path should now display C:\CG_Tools_Patches\6.4.3.7.

- d) Ensure that the **All files** option is selected.
- e) Ensure that the **Use Folder name** box is selected. This will maintain the folder structure used when the files were originally zipped by Pixel Power Ltd. (check the **PATH** column to see the folders that extracted files will reside in). It is vitally important that you maintain the folder structures when unpacking the patch files to your chosen location.
- f) Select **Extract**.

The files are extracted to C:\CG_Tools_Patches\6.4.3.7. You will notice that extra folders are created. Inside these folders are the application resource files and any sub folders (e.g. Hardware) that constitute the patch, as shown in the picture below.

F-121 Unzipped patch resource folders/files in C:\CG_Tools_Patches\6.4.3.7



13. Software Installation and Upgrade

If other resources have been included in the patch that are not part of the CG Tools n.n folder, they will appear in their own relevant folder e.g. CG Tools Shared (the same name as the relevant full installation folder) within the extraction folder i.e. C:\CG_Tools_Patches\6.4.3.7\CG Tools Shared.

13.7.4 Updating CG Tools software

5

1. Using Windows Explorer, browse to the location on the system hard disk where you unpacked the files (e.g. C:\CG_Tools_Patches\6.4.3.7).
2. Copy all files and folders within that folder.
3. Using Windows Explorer, browse to the location on the system hard disk where you previously installed the CG Tools (Clarity) software.

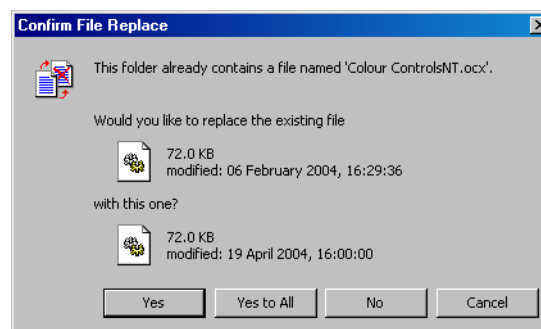
By default, this is C:\Program Files\Pixel Power Ltd.

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4. Paste the folders and files (select **Edit>Paste**) over the those that already exist in this folder. During the pasting process, the **Confirm File Replace** dialog box will appear asking you to confirm that you want to overwrite any files that already exist.

Select **Yes to All** to confirm that you want to overwrite any existing files of the same name.

F-122 Confirm File Replace dialog box

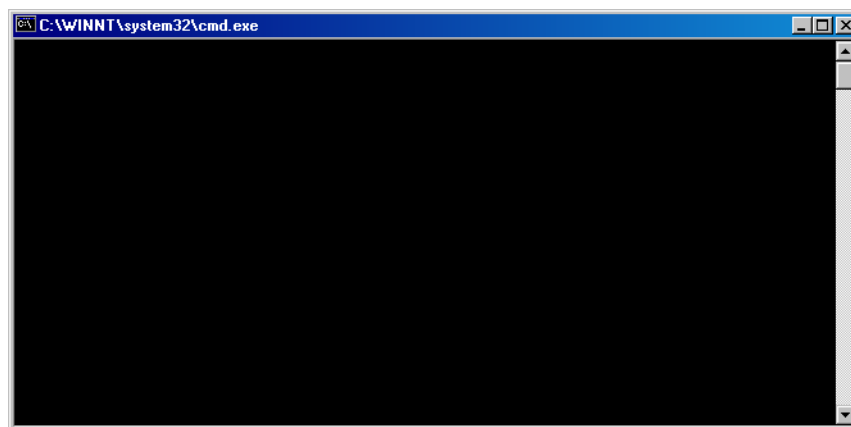


7

5. Run the REGISTER.BAT file in the CG Tools n.n folder e.g C:\Program Files\Pixel Power Ltd\CG Tools 6.4.

This batch file registers the new files in the Windows registry.

F-123 REGISTER.BAT MS-DOS batch file running



8

Is is essential that this is done before attempting to run any CG Tools software derivative.

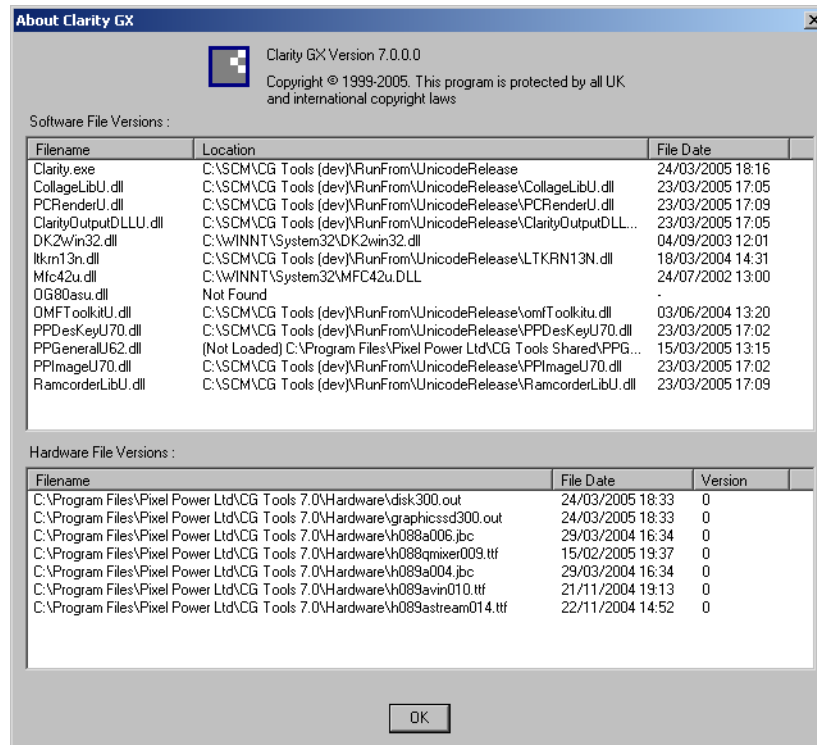
6. Re-start the PC or system unit.

13.7.5 Checking that the CG Tools software runs using the new resource files

9

1. Start your chosen CG Tools software derivative using one of the shortcuts on the desktop or from your preferred program group in the **Start** menu.
2. Select **Help>About**. The **About <Derivative Name>** dialog box is displayed.

F-124 About <Derivative Name> dialog box



3. The current version of the software is shown at the top of the dialog box. This should match the version number of the software update patch.

13. Software Installation and Upgrade

13.8 Installing Microsoft Windows Services for UNIX

The *Microsoft Windows Services for UNIX* software is supplied as an optional NFS Client, designed to run on a Clarity system unit or PC running the Clarity PREP or Collette for Collage software (referred to as the *Client* from hereon). It enables connectivity with Collage machines over an ethernet network. Follow the steps below to install the Microsoft Windows Services for UNIX software.

1. Make sure the Client is running.
2. Log in to the Client machine as the Administrator and make sure no other applications are running.
3. Make a note of the product key which is displayed on the Microsoft Windows Services for UNIX software CD.
4. If installing the software on a Clarity system unit, lift the hinged front panel and insert the CD into the CD-ROM drive. If installing the software on a PC, insert the CD into the CD-ROM drive.
5. Select **Start>Run**. The **Run** dialog box appears. In the **Open** text box, enter `D:\ENGLISH\UNIX20_WINSERV\SETUP\SCSETUP.EXE`, then press **Enter**.

If the CD-ROM drive corresponds to a different drive letter, substitute the correct letter. The installation begins.



6. Select **Next** to proceed.
7. Enter the desired user name and organization in the **User Name** and **Organisation** input boxes, then enter the product key. Select **Next** to proceed.
8. Select whether to accept or decline the terms and conditions of the software licence agreement. Select **Next** to proceed.

If you declined to accept the terms and conditions of the licence agreement, a message appears asking if you are sure you want to exit the installation. Select **Yes** to exit the installation or **No** to return.

9. Make sure that the **Standard Installation** is selected, then select **Next** to proceed.
10. At this point, you may be informed that you do not have enough disk space available to complete the installation on the selected drive. Select **OK**. There are two options available to you, one of which you will have to complete before you can continue with the installation:
 - increase the amount of hard disk space available on the selected drive, then select **OK** to proceed.
 - from the list box, select another drive on which to install the software, then select **OK** to proceed.

The installation will start and a progress bar will appear indicating the progress of the installation. When the installation is complete, you are given the option of restarting the Client automatically. Select **Finish** to complete the installation.

To learn more about configuring the client and Collage systems, refer to [“16.1 Microsoft® Windows® Services for UNIX networking”](#) on page 16.1 for more information.

13.9 What next?

13.9.1 Clarity PREP or Clarity Plugin

If you have just installed the CG Tools software on a PC, you can now set up any peripherals that you want to install e.g. keyboard. Refer to “[14. Basics](#)” on page 14.1 for more information.

To learn more about CG Tools software concepts and the Graphical User Interface (GUI), refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Getting Started" section.



H059W004 INDEX KEYWORD
[\[cg tools\]](#) [\[gui\]](#) [\[getting started\]](#)

13.9.2 Clarity

With the CG Tools software upgraded on a selected Clarity system unit, you can start finding your way around the software.

To learn more about CG Tools software concepts and the Graphical User Interface (GUI), refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Getting Started" section.



H059W004 INDEX KEYWORD
[\[cg tools\]](#) [\[gui\]](#) [\[getting started\]](#)

13. Software Installation and Upgrade

14. Basics

This chapter explains how to start the Clarity, Clarity PREP or Clarity Plugin software and describes how to find your way around a Clarity system unit. Finally, it explains how to exit the selected software product and shut down a Clarity system unit correctly.

14.1 Switching a Clarity system unit on

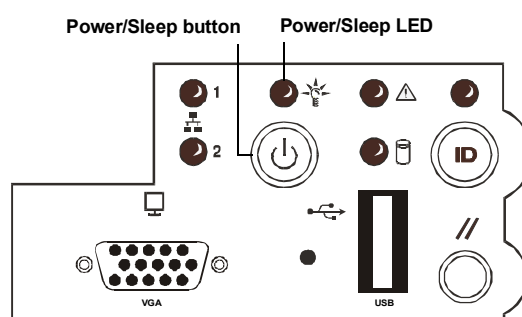
[CLARITY]

Once all connections have been made to the Clarity system unit, you are ready to switch on.

14.1.1 1U and 2U system units

With AC power supplied to the system unit, to switch on the unit, simply press the **Power/Sleep** button on the front panel.

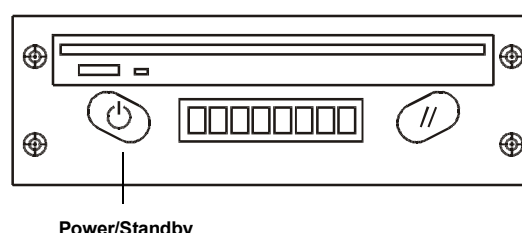
Visual confirmation is given by the illumination of the green Power/Sleep LED. The internal cooling fans should also start. If the unit does not appear to power up correctly, check that power supply is in working order. Refer to “[5. Clarity Power Supply Units \(PSU\) \[CLARITY\]](#)” on page 5.1 for more information.



To learn more about front panel controls and LED states, refer to “[19.1 1U and 2U Clarity system physical monitoring](#)” on page 19.1 for more information.

14.1.2 3U system units

With AC power supplied to the system unit, the front panel display should display the CLARITY>STANDBY intermittent message. To switch on the unit from standby mode, simply press the **Power/Standby** button on the front panel until the counter has elapsed.



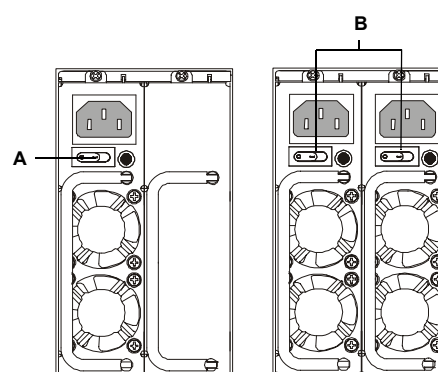
The internal cooling fans should start. If the unit does not appear to power up correctly, check that power supply is in working order. Refer to “[5. Clarity Power Supply Units \(PSU\) \[CLARITY\]](#)” on page 5.1 for more information.

To learn more about front panel controls and LED states, refer to “[19.2 3U Clarity system physical monitoring](#)” on page 19.3 for more information.

14.1.3 5U system units

14.1.3.1 System not on Standby

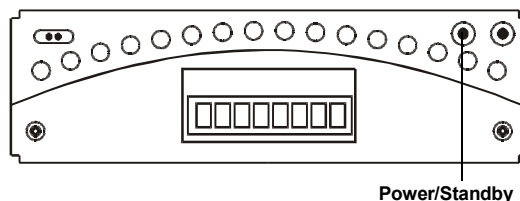
Depending on the PSU fitted, to switch on the system unit, simply press the black (A) rocker switch to the I position on the single non-redundant PSU or the rocker switches (B) on both PSU modules within the optional dual-redundant PSU. Visual confirmation is given by the illumination of the front panel display. The internal cooling fans should also start. If the unit does not appear to power up correctly, check that power supply is in working order. Refer to “[5. Clarity Power Supply Units \(PSU\) \[CLARITY\]](#)” on page 5.1 for more information.



14. Basics

14.1.3.2 System on Standby

The front panel display should display the CLARITY>STANDBY intermittent message. To switch on the unit from standby mode, simply press the **Power/Standby** button on the front panel.



The internal cooling fans should start. If the unit does not appear to power up correctly, check that power supply is in working order. Refer to “[5. Clarity Power Supply Units \(PSU\) \[CLARITY\]](#)” on page 5.1 for more information.

To learn more about front panel controls and LED states, refer to “[19.3 5U Clarity system physical monitoring](#)” on page 19.6 for more information.

14.2 Logging in

14.2.1 Clarity system unit

[CLARITY]

After switching on the Clarity system unit, Microsoft® Windows® XP Professional is loaded. To login, complete the following steps:

1. In the **User Name** text box of the **Login** Information dialog box, type **Administrator**.
You do not need to supply a password. You may want to set up a password once you have logged in. Refer to your Microsoft Windows documentation or ask your System Administrator for more information on how to do this.
2. Select **OK**.

After a few moments, you are presented with the default desktop screen.

F-125 Default desktop



To start the software, refer to “[14.5 Starting the CG Tools software](#)” on page 14.9 for more information.

14.2.2 Clarity PREP or Clarity Plugin PC

[PREP][PLUGIN]

After restarting the PC on which you installed the CG Tools software, Microsoft Windows is loaded. Use your preferred login user name and password.

To start the software, refer to “[14.5 Starting the CG Tools software](#)” on page 14.9 for more information.

14.3 Finding your way around a Clarity system unit

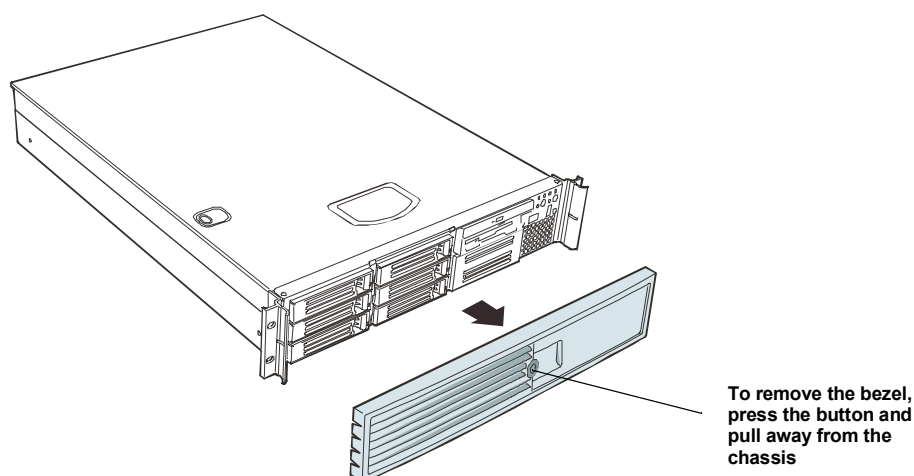
[CLARITY]

14.3.1 1U and 2U system units

14.3.1.1 Bezel removal

Follow the instructions below to remove the front bezel from 1U and 2U Clarity system units (Clarity 200 STYLE A system unit shown in example).

F-126 1U and 2U Clarity system unit bezel removal

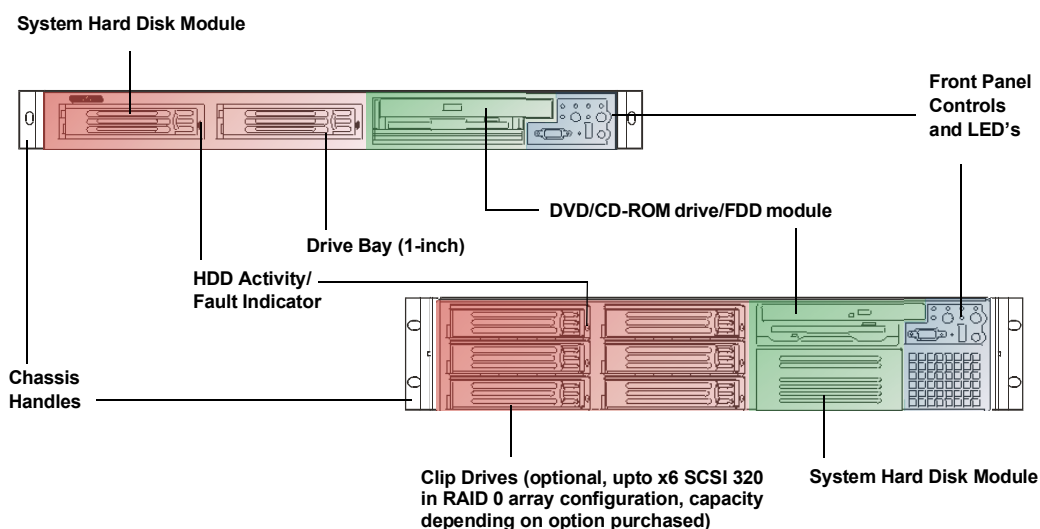


14.3.1.2 Front panel

The front of 1U and 2U Clarity system units are vertically split into three visible sections. Drive bays on the left (red), optical/magnetic storage peripherals in the middle (green) and then system controls on the right (blue).

To learn about the drive bays that are utilised for optional clip storage on Clarity 200 system units, refer to [“18. Clarity Clip Storage and Management \[CLARITY\]”](#) on page 18.1 for more information.

F-127 1U and 2U Clarity system unit front panels

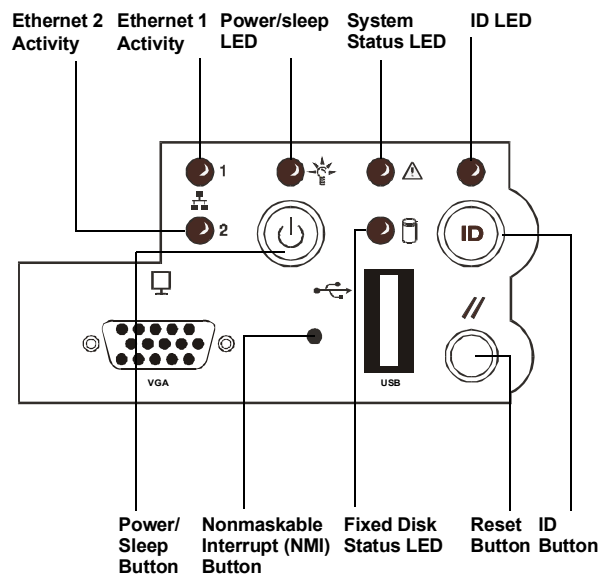


14. Basics

14.3.1.3 Front panel controls and LED's

1U and 2U Clarity system units feature the following front panel controls and LED's, enabling clear visual representation of system and sub-system status. Refer to [“19.1.2 Front panel”](#) on page 19.1 for more information.

F-128 1U and 2U Clarity system unit front panel controls and LED's

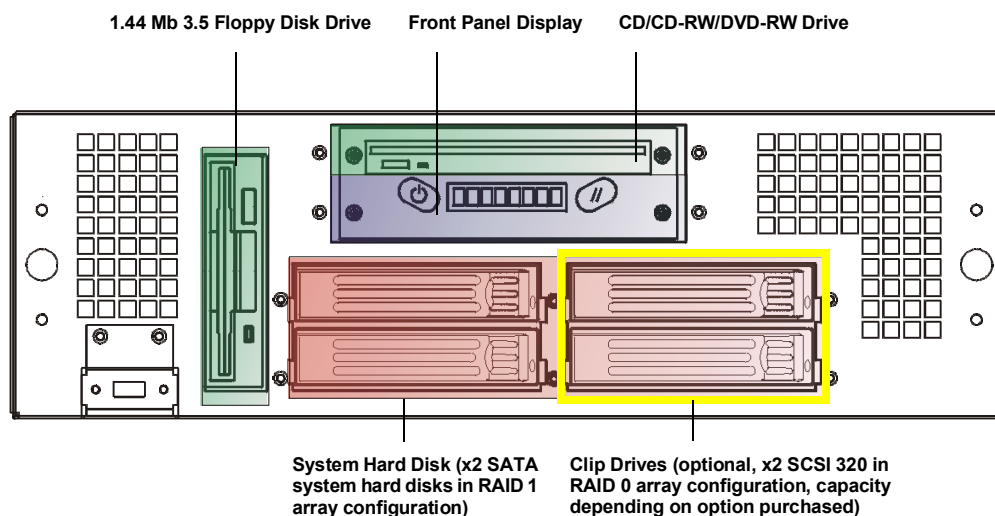


14.3.2 3U system units

14.3.2.1 Front panel

The CD/CD-RW/DVD-RW drive and front panel display are always visible, even if the removable front panel is fitted. The 1.44 Mb 3.5 floppy disk drive and clip drives (if the internal clip storage option is specified) are located behind the removable front panel. To remove the front panel, pull the panel away, using the cutouts in each side of the cover as leverage points. The panel will clip out from the front of the system unit chassis.

F-129 Exposed 3U Clarity system unit front panel



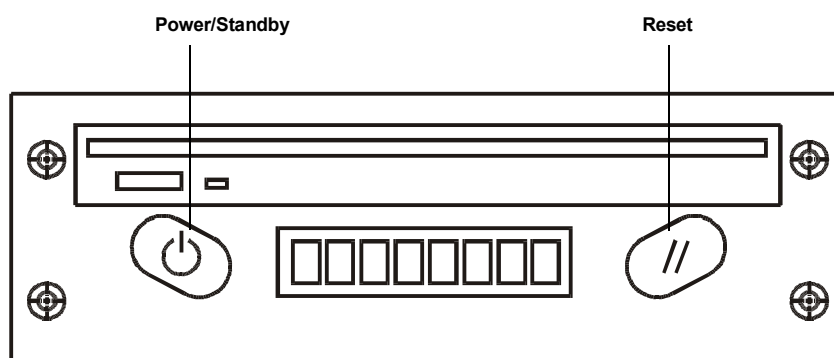
The front panel should also be removed to enable cleaning of the air filter. Refer to [“21.1 Air filter maintenance”](#) on page 21.1 for more information.

To learn about the drive bays that are utilised for optional clip storage on 3U Clarity system units, refer to [“18. Clarity Clip Storage and Management \[CLARITY\]”](#) on page 18.1 for more information.

14.3.2.2 Front panel display

3U Clarity system units feature a front panel display, enabling clear visual representation of system and sub-system status via LED's and an eight character dot matrix display. Refer to [“19.2.3 Front panel display”](#) on page 19.3 for more information.

F-130 3U Clarity system unit front panel display



14.3.2.2.1 Reset button

To reset the Clarity system unit, press this button and hold until the counter on the eight character dot matrix display reaches zero, then release.

14.3.2.2.2 Power/Standby button

To switch the Clarity system unit into standby mode, press and hold this button until the counter on the eight character dot matrix display reaches zero, then release. The CLARITY>STANDYBY message is displayed. To exit standby mode, press the button again momentarily.

These operations are only possible when the mains power is connected and switched on.

14.3.2.3 System hard disks

The left-hand two drive bays are occupied by the hot swappable SATA system hard disks in a RAID 1 (mirrored) array configuration. The other two bays can be occupied by hard disks that form the selected internal clip storage option in a RAID 0 array configuration.

To learn more about removing and replacing hot swappable SATA system hard disks, refer to [“18.9 Drive removal, replacement and re-fitment”](#) on page 18.8 for more information.

14.3.3 5U system units

The front of a 5U Clarity system unit is horizontally split into two visible sections.

14.3.3.1 Top front panel

The data storage and retrieval devices are located beneath a hinged front panel which covers the top half. To reveal the devices, simply lift the cover 180 degrees until it locks vertically into position.

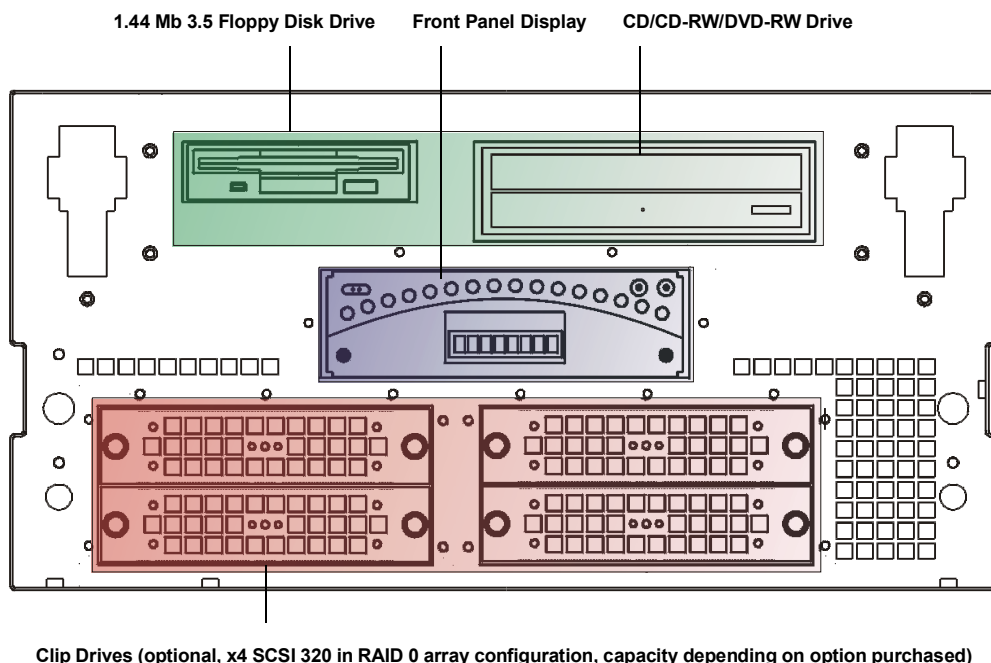
Some system units may not feature all data storage and retrieval devices.

14. Basics

14.3.3.2 Lower front panel

If the internal clip storage option is specified, the clip drives are located behind the lower front panel. To remove the lower front panel, pull the lower panel away, using the cutouts in the top recess of the cover as leverage points. The panel will clip out from the front of the system unit chassis.

F-131 Exposed 5U Clarity system unit front panel



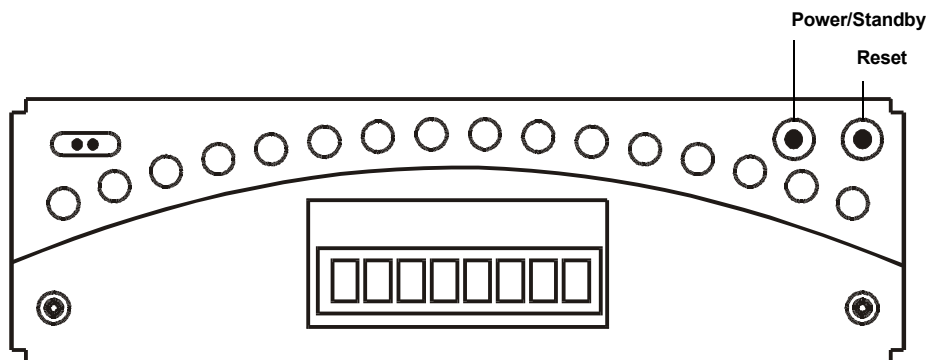
The lower front panel should also be removed to enable cleaning of the air filter. Refer to [“21.1 Air filter maintenance”](#) on page 21.1 for more information.

To learn about the drive bays that are utilised for optional clip storage on Clarity 500 and Clarity 5000 system units, refer to [“18. Clarity Clip Storage and Management \[CLARITY\]”](#) on page 18.1 for more information.

14.3.3.3 Front panel display

5U Clarity system units feature a front panel display, enabling clear visual representation of system and sub-system status via LED's and an eight character dot matrix display. Refer to [“19.3.2 Front panel display”](#) on page 19.6 for more information.

F-132 5U Clarity system unit front panel display



14.3.3.3.1 Reset button

Press this button to reset the Clarity system unit.

14.3.3.3.2 Power/Standby button

Press and hold this button to switch the Clarity system unit into standby mode. The standby LED illuminates. To exit standby mode, press the button again momentarily.

These operations are only possible when the mains power is connected and switched on.

14.3.4 Networking

As part of your solution, you may want to connect a Clarity system unit or PC running the Clarity PREP or Clarity Plugin software to an ethernet 10/100/1000 network to enable access to other machines containing graphics and other resources. If you want to network a Clarity system unit, we suggest that you contact your System Administrator for more information.

To learn more about configuring the client and Collage systems for use with the *Microsoft Windows Services for UNIX* software, refer to “[16.1 Microsoft® Windows® Services for UNIX networking](#)” on page 16.1 for more information.

14. Basics

14.4 Setting up a Wacom tablet

Before the supplied Wacom tablet can be used with the software, the Wacom tablet drivers must be installed.

If you are using a Clarity system unit, the latest Wacom drivers will have been installed prior to delivery.

Follow the manufacturers instructions for installing the drivers, making sure to select a typical installation.

Once the drivers have been installed, you must re-start your Clarity system unit or PC running the Clarity PREP or Clarity Plugin software.

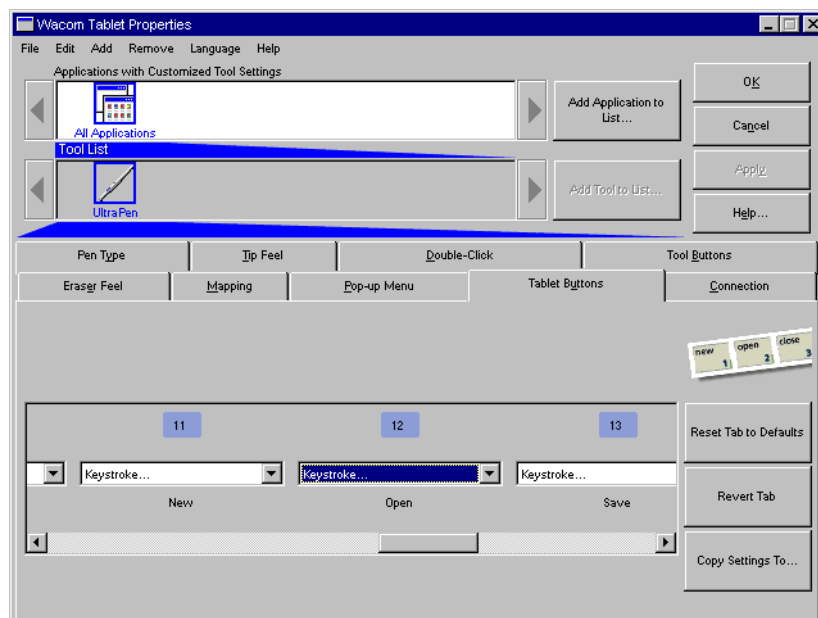
The menu strip along the top of the tablet active area can be mapped to perform certain software functions. The F1-F11 function buttons are used for their default operations, as marked on the tablet. By convention, CG Tools software products use the F12 button to provide a shortcut into painting and the F13 button to switch in and out of correct aspect painting mode.

In order to enable these function buttons, the Wacom tablet driver must be configured to send the correct key sequence information to the application when these buttons are selected.

Follow the steps below:

1. Select **Start>Settings>Control Panel**. The **Control Panel** is displayed.
2. Select **Wacom Tablet Properties** from the **Control Panel**. The **Wacom Tablet Properties** dialog box appears.
3. Select the **Tablet Buttons** dialog tab, then scroll along the button definitions until you reach 12.

F-133 Wacom Tablet Properties dialog box



4. Select **Keystroke** from the drop-down list box. The **Define Keystroke** dialog box displayed.
Press the key combination **CTRL + SHIFT + ALT + P** to define the keystroke for F12, then click or pen down on **OK**.

F-134 Define Keystroke dialog box



Repeat the entire operation to establish the key sequence for F13, using the **CTRL + SHIFT + ALT + T** key combination.

14.5 Starting the CG Tools software

Once logged into Microsoft® Windows®, you can run the CG Tools software.

For more information on how to do this, refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Starting the CG Tools software" section in the "Getting Started" section.



H059W004 INDEX KEYWORD
[\[starting\]](#) [\[cg tools\]](#)

14.6 Setting up a RapidAction keyboard

The RapidAction keyboard must be programmed before the RapidAction keys will function correctly. This is normally done as part of the manufacturing process for the keyboard. On occasions, it may become necessary to re-establish the programming.

For more information on how to do this, refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Keyboards" section in the "Getting Started" section.



H059W004 INDEX KEYWORD
[\[keyboard\]](#)

All of the KVM extenders we have tried with the RapidAction keyboard block the keyboard programming commands. This means that the keyboard must be plugged directly into the Clarity system unit or PC running the Clarity PREP or Clarity Plugin software in order for this operation to be successful.



H059W004 INDEX KEYWORD
[\[kvm\]](#)

To learn more about the RapidAction keyboard, refer to “[17. Keyboard](#)” on page 17.1 for more information.

14. Basics

14.7 Exiting the software

For more information on how to do this, refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Exiting the CG Tools software" topic in the "Getting Started" section.



H059W004 INDEX KEYWORD
[\[exiting\]](#)

14.8 Shutting down a Clarity system unit correctly [CLARITY]

To shut down a Clarity system unit correctly, follow the steps below:

1. Make sure that all software applications have been closed.
2. From the **Start** menu, select **Shut Down**. The **Shut Down Windows** dialog box appears.
3. Select **Shut down** from the drop-down list box.
4. After a few seconds, the system is shut down and reverts to standby mode.

14.9 What next?

Now that you have got to know the basics of your Clarity system and CG Tools software product, you can start finding your way around the software.

To learn more about CG Tools software concepts and the Graphical User Interface (GUI), refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Getting Started" section.



H059W004 INDEX KEYWORD
[\[gui\]\[getting started\]](#)

At this point, if you are a Clarity user, you may also want to configure your systems' hardware configuration settings. Refer to “[15. Hardware Configuration \[CLARITY\]](#)” on page 15.1 for more information.

15. Hardware Configuration

[CLARITY]

System configuration is achieved using the Clarity software. Depending on whether you have the availability of SD channels or both SD and HD channels will dictate the options available for configuration. Hardware configuration options may include but are not limited to:

- System wide/channel settings (video format, genlock source and phase, video input configuration, input status monitoring and analogue input termination etc.).
- Channel video configuration (aspect ratio, analog monitor format and source, default live source, video input frame synchroniser and sampling settings etc.).
- Video line blanking (program, auxiliary and active picture line pass through).
- DSK (Down Stream Keyer) configuration (live source, video out, video data format, blanking, sampling, video and key compensation, key inversion, EDH and/or CRC generation etc.).
- Preview/Auxiliary video configuration (video and key source, sampling, video and key compensation, key inversion etc.).

The video hardware available within your system will affect the availability of the configuration dialog box variant that can be used to configure the system unit. This is ascertained dynamically when the CG Tools software is started on the system unit.

System unit hardware configuration is achieved using the **Hardware Configuration** dialog box. To display the **Hardware Configuration** dialog box where hardware configuration can be achieved, follow the steps below:

- Select **Options>Hardware>Settings**. The **Hardware Configuration** dialog box appears.

Clarity system unit hardware configurations can be saved and subsequently loaded using the **Save** and **Load** buttons to enable the system unit to be configured to run in different operating scenarios. For example, if a Clarity system unit is used in an edit suite and as a stand alone unit for conference work, two different configurations could be stored under specific names. When the machine is transferred between the two environments, the appropriate configuration could then be loaded.

The configuration currently loaded is shown in the title bar of the **Hardware Configuration** dialog box.

To learn more about the configuration options available with the **Hardware Configuration** dialog box, refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Dialog Boxes" section.



H059W004 INDEX KEYWORD

[\[sd configuration\]](#)[\[sd/hd configuration\]](#)[\[hardware\]](#)

15. Hardware Configuration [CLARITY]

16. Networking

16.1 Microsoft® Windows® Services for UNIX networking

The *Microsoft® Windows® Services for UNIX* software is supplied as an optional NFS Client, designed to run on a Clarity system unit or PC running the Clarity PREP software (referred to as the *Client* from hereon). It enables connectivity with Collage machines over an ethernet network.

For instructions on installing *Microsoft Windows Services for UNIX*, refer to “[13.8 Installing Microsoft Windows Services for UNIX](#)” on page 13.20 for more information.

Once the software has been installed, read the sections below to learn more about configuring the client and Collage systems.

16.1.1 Configuring Collage and the Client

If you are connecting to an existing network, please contact your system administrator to obtain the necessary IP address information. Before continuing, make sure that the Collage machine is running and is physically connected to your ethernet network.

16.1.1.1 Setting up IP addresses

Collage

1. Select the **File Utilities** command from the **Config** menu on the main **Command** menu.
2. Select the **Edit** command from the **File Utilities** menu to access the **Edit** file list and menu. The **Edit** file list will display all files within a directory together with their file extensions.
3. Use the **Drive** and **Directory** commands to display the root directory of the Collage main drive.
4. Select the HOSTS file from the file list and confirm.

```
# Pixel Power COLLAGE
#
# Filename : hosts
#
# This file contains mappings of IP address and aliases for all the
# machines that this Collage will be in contact with. The local host
# (ie this machine), must be defined on the first significant line
# of this file.
#
# (comments lines must contain a '#' in first column)
#
# This file is only consulted on system startup
#
192.168.80.240 collage1
```

5. Enter the address and hostname on the first significant line after the # defined narrative text.
6. Select and confirm the **Save** command to save the file.

The IP address of the Collage machine should be on the same subnet as the Client. For example, if the Client IP address is 191.0.1.200, then the Collage IP address should be 191.0.1.x, where x is a unique number between 0 and 255.

Further information on setting up the HOSTS file can be found in the Collage Ethernet Manual.

16. Networking

Collage 2

1. Select the **File Utilities** command from the **Config** menu on the main **Command** menu.
2. Select the **Edit** command from the **File Utilities** menu to access the **Edit** file list and menu. The **Edit** file list will display all files within a directory together with their file extensions.
3. Use the **Drive** and **Directory** commands to display the root directory of the Collage 2 main drive.
4. Select the RACKID file from the file list and confirm.

```
# Pixel Power COLLAGE 2
#
# Filename: rackid
#
# This file contains the static IP address and name for this rack,
# together with an optional network subnet-mask.
#
# (comments lines must contain a '#' in first column)
# N.B. This file is only consulted on system startup.
#
# If no ethernet is to be used then set the subnet-mask to 255.255.255.255,
# this is a special value which disables the Collage ethernet.
#
# If a DHCP server is available then the static IP address should be set to
# 0.0.0.0, this is a special value which signals that a dynamic IP address should
# be requested.
#
# e.g. if this rack is called 'thiscollage',
#      has an IP address of 191.0.0.247,
#      and a subnet mask of 255.255.255.0.
#
191.0.0.247      collage2      255.255.255.0
```

5. Enter the IP address and hostname on the first significant line after the # defined narrative text.
6. Select and confirm the **Save** command to save the file.

The IP address of the Collage 2 machine should be on the same subnet as the Client. For example, if the Client IP address is 191.0.1.200, then the Collage 2 IP address should be 191.0.1.x, where x is a unique number between 0 and 255.

Further information on setting up the RACKID file can be found in the Collage 2 Reference Manual.

Client

Make sure that you are running a TCP/IP stack on the Client by following the steps below:

Microsoft® Windows XP® operating systems are described in this section.

1. Select **Start>Settings>Control Panel**. The **Control Panel** window is displayed.
2. Select **Network Connections** to display the **Network Connections** window.
3. Right-click on **Local Area Connection** and select **Properties** from the shortcut menu that appears.
4. On the **General** dialog tab, make sure that **Internet Protocol (TCP/IP)** is listed and checked in the list box.

If **Internet Protocol (TCP/IP)** is not listed, you need to add it. Refer to your Microsoft® Windows XP® documentation for more information on how to add networking protocols.

With a TCP/IP stack present, you now need to list the IP address and hostname of the Collage you want to communicate with:

1. Using Windows Explorer, browse to the `WINDOWS\System32\Drivers\etc` folder.
2. Right-click on the `HOSTS` file and select **Open With** from the shortcut menu that appears.
3. Select **NotePad** or an equivalent text editor from the **Open With** dialog box.

```
# Copyright (c) 1993-1999 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#       102.54.94.97       rhino.acme.com           # source server
#       38.25.63.10       x.acme.com               # x client host


127.0.0.1    localhost
191.0.0.247  collage
```

4. Edit the `HOSTS` file so that it contains the IP address and hostname of the Collage that you want to communicate with.

If the `HOSTS` file is not present, open the example `LMHOSTS.SAM` file and use this file as a basis for creating a `HOSTS` file.

For more information on working with hosts, refer to your Microsoft® Windows XP® documentation or see the Microsoft website.

16.1.1.2 Checking ethernet network connectivity

At this point, you should be able to communicate with the Collage by following the steps below:

1. Select **Start>All Programs>Accessories>Command Prompt**. The **Command Prompt** window appears.
2. Type `ping` at the command prompt and then the host name of the Collage.

For example, if the Collage hostname is 'graphics1', you would type:

```
ping graphics1
```

3. Press **Enter**.

16. Networking

You should get a reply similar to the following:

```
Pinging graphics1 [191.0.1.50] with 32 bytes of data:  
Reply from 191.0.1.50: bytes=32 time<10ms TTL=128  
Reply from 191.0.1.50: bytes=32 time<10ms TTL=128
```

If you do not get a reply similar to the above, check the network cable connections, and then the HOSTS files on both the Client and Collage.

16.1.1.3 Mapping a network drive to Collage (100M Ethernet) or Collage 2

With the *Microsoft® Windows® Services for UNIX* NFS Client software installed on the Client, follow the steps below to map a drive to the main disk on a Collage or Collage 2 machine.

1. Select **Start>My Network Places**. The **My Network Places** window is displayed.
2. Double-click on **NFS Network**.
3. Double-click on **Default LAN**. A list of machines available via the NFS system are displayed. The desired Collage or Collage 2 machine should be one of them.
4. Double click on the hostname in the list. If the hostname is a Collage machine, a yellow folder, titled D00 will appear. If the hostname is a Collage 2 machine, a yellow folder, titled SCSI0 will appear
5. Right-click on this folder, then select **Map Network Drive** from the shortcut menu that appears. The **Map Network Drive** dialog box appears.
6. Select a drive letter from the **Drive** drop-down list box.
7. Make sure the **Reconnect at Logon** box is checked to ensure you only have to map the drive once.
8. Select **OK**

If you now select the drive letter that you mapped in the steps above whilst using Windows Explorer, the file listing of the mapped Collage main drive is shown.

17. Keyboard

To learn more about keyboards, refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Keyboards section" in the "Getting Started" section.



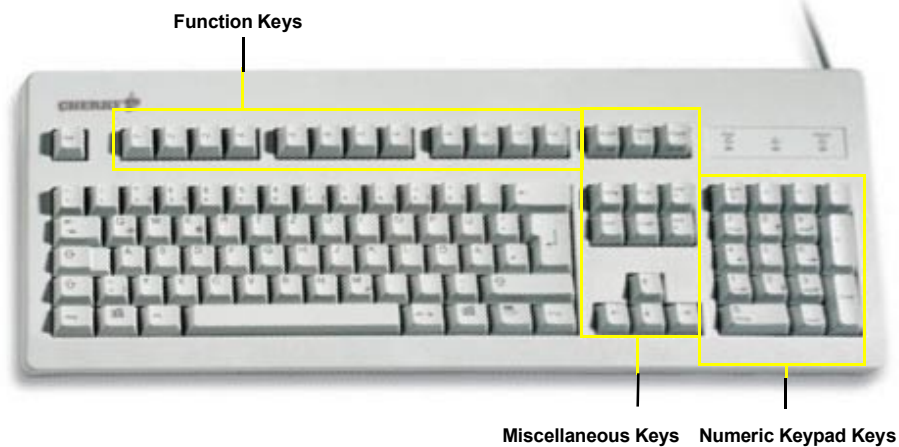
H059W004 INDEX KEYWORD

[\[keyboard\]](#) [\[getting started\]](#) [\[user preferences\]](#)

17.1 Standard keyboard

The Standard keyboard is supplied as standard with Clarity 100.

F-135 Standard keyboard



17.1.1 Function keys

The F4 key and the second and third groups of functions keys enable channel selection and the selection Down Stream Keying (DSK) modes.

17.1.2 Numeric keypad keys

The keys on the numeric keypad provide access to a number of shortcuts.

17.1.3 Miscellaneous keys

The miscellaneous keys provide access to a number of shortcuts.

17. Keyboard

17.2 Version 2 RapidAction keyboard

The Version 2 RapidAction keyboard is currently supplied as standard with 2U, 3U and 5U Clarity systems (optional for 1U Clarity systems and offline software derivatives e.g. Clarity PREP). It provides a larger number of dedicated keys (40) compared to the Version 1 RapidAction keyboard. The Version 2 RapidAction keyboard also features some illuminated keys to help inform the operator of the current state of the system, software and playout status.

F-136 Version 2 RapidAction keyboard



17.2.1 RapidAction keys

The 40 RapidAction keys have one or two functions associated with them. The second function (labelled in blue) is accessed by pressing and holding the left-hand **CTRL** operator key. Some keys have further functions that are utilised using further combinations of the left-hand **SHIFT** and **CTRL** operator keys.

17.2.2 Numeric keypad keys

The keys on the numeric keypad provide access to a number of shortcuts. On RapidAction keyboards, these keys have special legends relating to their function.

17.2.3 Miscellaneous keys

The miscellaneous keys provide access to a number of shortcuts. On RapidAction keyboards, these keys have special legends relating to their function.

17.3 Keyboard/Video/Mouse (KVM) extenders and switches

Where the distance between a Clarity system unit and its associated keyboard, mouse and tablet are greater than recommended, an extension will be required in order to guarantee the correct operation of the system

To learn more about KVM extenders and switches, refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Keyboard/Video/Mouse (KVM) extenders and switches" section in the "Getting Started/Keyboards" section.



H059W004 INDEX KEYWORD

[\[kvm\]](#)

17. Keyboard

18. Clarity Clip Storage and Management [CLARITY]

18.1 About optional disk storage for video/audio clip player

Available in the following products and software derivatives:

T-64 Optional internal disk storage for video/audio clip player

| Current Product | | | | | | | | Output | | Derivatives | | |
|-----------------|--------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|--------------|----------------|---------------|----|---------------|----|----|
| Clarity 100 | Clarity 200 | Clarity 300 | Clarity 500 | Clarity 3000 | Clarity 5000 | Clarity PREP | Clarity Plugin | SD | HD | TG | CG | GX |
| | OPT | OPT | OPT | OPT | OPT | | | Not Dependant | | Not Dependant | | |
| | PP8434 PP8435 PP8453 PP8455 | PP8434 PP8435 PP8453 | PP8400 PP8401 PP8454 | PP8434 PP8435 PP8453 | PP8400 PP8401 PP8454 | | | | | | | |

T-65 Optional 2RU external storage for video/audio clip player

| Current Product | | | | | | | | Output | | Derivatives | | |
|-----------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------|----------------|---------------|----|---------------|----|----|
| Clarity 100 | Clarity 200 | Clarity 300 | Clarity 500 | Clarity 3000 | Clarity 5000 | Clarity PREP | Clarity Plugin | SD | HD | TG | CG | GX |
| | OPT | OPT | OPT | OPT | OPT | | | Not Dependant | | Not Dependant | | |
| | PP8263 PP8397 PP8398 PP8398 | PP8263 PP8397 PP8398 PP8399 | PP8263 PP8397 PP8398 PP8399 | PP8263 PP8397 PP8398 PP8399 | PP8263 PP8397 PP8398 PP8399 | | | | | | | |

18.1.1 Internal chassis storage

The optional internal clip storage solutions comprise up to six hard 3.5" disks (depending on option) striped to act as a single striped volume set with RAID 0 compliance. When clips are written to the striped volume set, data is split equally over the array. All drives are hot-swappable, meaning that they can be removed and replaced whilst the system is running.

If you have ONLY purchased audio clip storage, refer to [“18.2 About optional disk storage for audio clip player”](#) on page 18.2 for more information.

T-66 Internal chassis storage options

| PART | Description | Specification | New systems | Retrofit |
|--------|-----------------------------|--------------------------|-------------|----------|
| PP8400 | Internal clip storage 144Gb | 4 x 36Gb 15K rpm drives | Yes | No |
| PP8401 | Internal clip storage 288Gb | 4 x 72Gb 15K rpm drives | Yes | No |
| PP8434 | Internal clip storage 72Gb | 2 x 36Gb 15K rpm drives | Yes | Yes |
| PP8435 | Internal clip storage 144Gb | 2 x 72Gb 15K rpm drives | Yes | Yes |
| PP8453 | Internal clip storage 288Gb | 2 x 144Gb 15K rpm drives | Yes | Yes |
| PP8454 | Internal clip storage 576Gb | 4 x 144Gb 15K rpm drives | Yes | Yes |
| PP8455 | Internal clip storage 864Gb | 6 x 144Gb drives | Yes | Yes |

18. Clarity Clip Storage and Management [CLARITY]

18.1.2 Chaparral 2RU external storage

The optional external clip storage solutions are packaged in just 2U of 19" rack space. They offer support for Ultra 320 SCSI RAID levels 0 and 5, depending on model. All models feature dual redundant power supplies and all rack modules (PSU's, hard disks etc.) are hot-swappable, meaning that they can be removed and replaced whilst the system is running.

T-67 Optional 2RU external storage

| PART | Description |
|--------|---|
| PP8263 | Chaparral 2RU External Storage 144Gb with dual redundant power supplies. |
| PP8397 | Chaparral 2RU External Storage 288Gb with dual redundant power supplies. |
| PP8398 | Chaparral 2RU External Storage 144Gb RAID 5 with hot spare and dual redundant power supplies. |
| PP8399 | Chaparral 2RU External Storage 288Gb RAID 5 with hot spare and dual redundant power supplies. |

18.1.2.1 Working with external clip storage

The optional external clip storage is formatted and striped by Pixel Power before delivery, ready for the acquisition of clip data onto the volume.

External storage solutions are connected via the ULTRA SCSI 320 connectors on the system unit rear panel. Refer to [“4.13.3 SCSI”](#) on page 4.68 for more information.

For more information on physical installation and maintenance, refer to [“21.11.2 Installing an optional Chaparral 2RU SCSI external storage unit”](#) on page 21.43 for more information.

18.2 About optional disk storage for audio clip player

Available in the following products and software derivatives:

T-68 Optional internal disk storage for audio clip player

| Current Product | | | | | | | | Output | | Derivatives | | |
|-----------------|------------------|------------------|------------------|------------------|------------------|--------------|----------------|---------------|----|---------------|----|----|
| Clarity 100 | Clarity 200 | Clarity 300 | Clarity 500 | Clarity 300 | Clarity 5000 | Clarity PREP | Clarity Plugin | SD | HD | TG | CG | GX |
| | OPT | OPT | OPT | OPT | OPT | | | Not Dependant | | Not Dependant | | |
| | PP8412 PP8413 | PP8412 PP8413 | PP8412 PP8413 | PP8412 PP8413 | PP8412 PP8413 | | | | | | | |

18.2.1 Internal chassis storage

Provides a single channel, uncompressed audio disk recorder. Uses a single internal drive bay; remaining drive bays are blanked or use empty drive carriers. This option is only relevant if you are NOT purchasing video AND audio clip storage.

T-69 Internal chassis storage options

| PART | Description | Specification | New systems | Retrofit |
|--------|----------------------------------|------------------------|-------------|----------|
| PP8412 | Internal audio clip storage 36Gb | 1 x 36Gb 15K rpm drive | Yes | No |
| PP8413 | Internal audio clip storage 72Gb | 1 x 72Gb 15K rpm drive | Yes | No |

18.3 About RAID 0

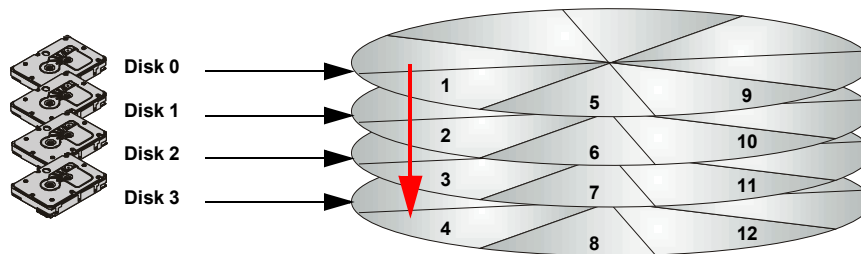
RAID 0 offers the highest level of disk write/read performance via striped parallel drive configurations WITHOUT the performance penalty of a parity stripe. The trade-off for increased performance is that there is no in-built data recovery ability in the event of drive failure.

If RAID 5 compliance is desired (parallel drives and parity striping), you must purchase an external RAID 5 compliant SCSI clip storage solution. Refer to “[18.1.2 Chaparral 2RU external storage](#)” on page 18.2 for more information.

18.4 About striped volume sets

The disks act as a striped volume set. The volume is treated by the Clarity software as a single partition. The volume is striped, meaning that clip data will be stored evenly (e.g. 25% per disk in a four disk array) across all of the physical partitions instead of to one partition at a time. Because data is stored in this way, it can be read and written much faster than to a standard volume set.

F-137 Clip storage clip data allocation through striped volume set



18.5 Important information regarding data safety

18.5.0.1 Disclaimer

Data loss can result from many causes. These can include virus attacks, system malfunction, or human error in the handling or installation of drives. Pixel Power Ltd. highly recommends that users take standard measures to protect their data, the most important of which are frequent and regular backups and diagnostic checks of your drives. Pixel Power Ltd. does not warrant any form of data loss. Pixel Power Ltd. is not responsible for loss of data because of a lack of an effective data recovery/backup system or implementation.

18.5.0.2 Why do I need to implement a data recovery procedure?

Because data is split equally over the entire disk set (volume), if a drive fails, then the data on the remaining three drives is of no use and as a result the entire volume is rendered unusable. When the faulty drive is replaced, the entire volume will have to be formatted and re-striped, returning the volume to its factory state.

18.5.1 How can I test my clip storage?

To learn more about:

- creating a clip to test clip storage;
- inserting the example clip supplied on the clip store;

refer to “[18.13 Testing clip storage and learning more about using clips](#)” on page 18.19 for more information. If you want to learn more about the physical aspects of the internal clip storage options, refer to subsequent sections.

18. Clarity Clip Storage and Management [CLARITY]

18.6 Clip drive locations within system unit derivatives

18.6.1 2U Clarity systems

There are six hard drive caddies which are visible externally on the front of chassis with the front bezel removed. The drives themselves are not visible externally until a drive caddy is removed.

When internal clip storage drives are fitted during production, they are installed in the order shown below. For instance, an option comprising of four hard disks would occupy the first four drive bays.

18.6.1.1 Removing the system unit front bezel

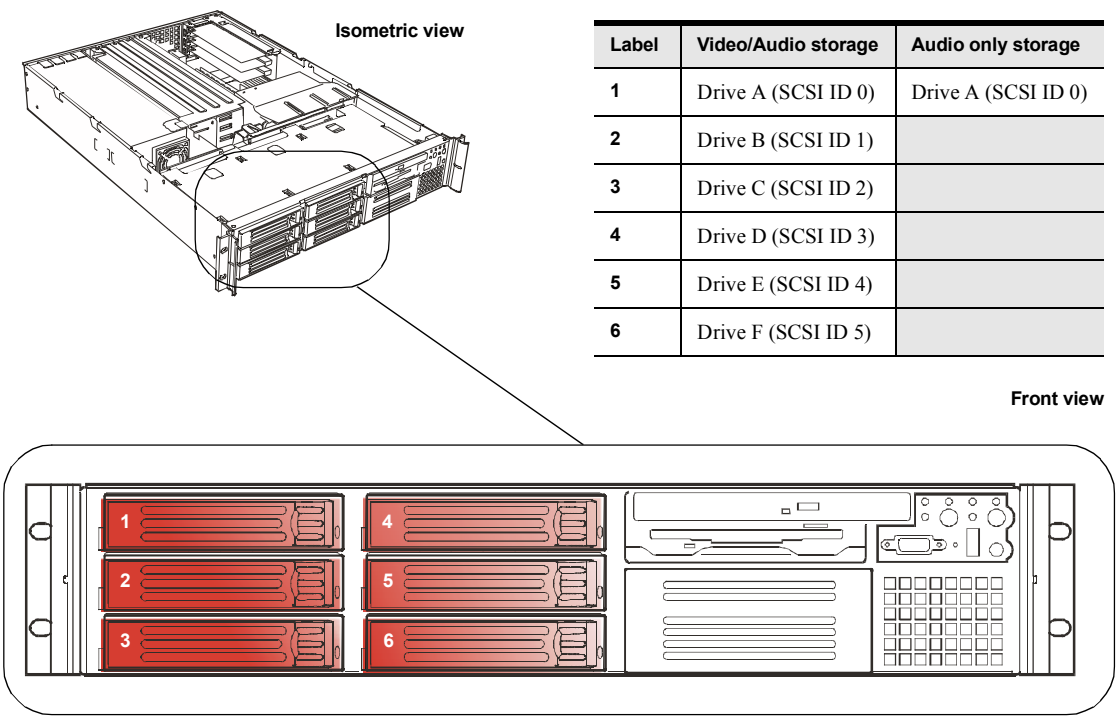
To remove the bezel, press the button and pull away from the chassis.

In normal operation the bezel should not need to be removed. The bevel should only be removed when replacing a faulty drive or swapping an entire volume between system units.

18.6.1.2 Location

The six drive caddies are now visible. SCSI ID's are used to identify disks when performing volume analysis. Refer to “18.11.6 Analysing a formatted volume” on page 18.18 for more information.

F-138 2U Clarity system unit factory clip drive location and identification within chassis



18.6.2 3U Clarity systems

There are four hard drive caddies which are visible externally on the front of chassis with the front panel removed. The drives themselves are not visible externally until a drive caddy is removed.

The left-hand two drive bays are occupied by the hot swappable SATA system hard disks in a RAID 1 (mirrored) array configuration. The other two bays can be occupied by hard disks that form the selected internal clip storage option in a RAID 0 array configuration.

When internal clip storage drives are fitted during production, they are installed in the order shown below. For instance, an audio option comprising of a single hard disk would occupy the first drive bay.

18.6.2.1 Removing the system unit front panel

To remove the front panel, pull the panel away, using the cutouts in each side of the the cover as leverage points. The panel will clip out from the front of the system unit chassis.

Store the cover in a safe place, being careful not to lose the air filter contained within the panel.

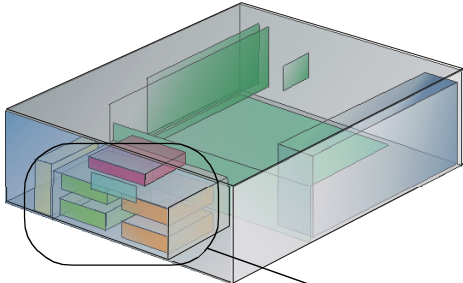
In normal operation the panel should not need to be removed. The panel should only be removed when replacing a faulty drive or swapping an entire volume between system units.

18.6.2.2 Location

The four drive caddies are now visible. SCSI ID's are used to identify disks when performing volume analysis. Refer to “18.11.6 Analysing a formatted volume” on page 18.18 for more information.

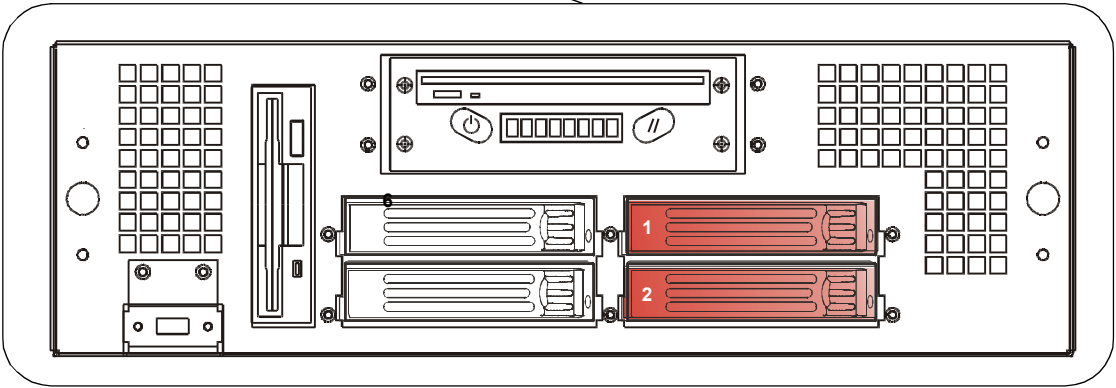
F-139 3U Clarity system unit factory clip drive location and identification within chassis

Isometric view



| Label | Video/Audio storage | Audio only storage |
|-------|---------------------|---------------------|
| 1 | Drive A (SCSI ID 0) | Drive A (SCSI ID 0) |
| 2 | Drive B (SCSI ID 1) | |

Front view



18. Clarity Clip Storage and Management [CLARITY]

18.6.3 5U Clarity systems

There are four hard drive caddies which are visible externally on the front of chassis with the lower front panel removed. The drives themselves are not visible externally until a drive caddy is removed.

18.6.3.1 Removing the system unit lower front panel

To remove the lower front panel, lift the top panel up to expose the media drives. On the top edge of the lower panel are two cutouts. Pull the lower panel away, using the cutouts as leverage points. The panel will clip out from the front of the system unit chassis.

Store the cover in a safe place, being careful not to lose the air filter contained within the panel.

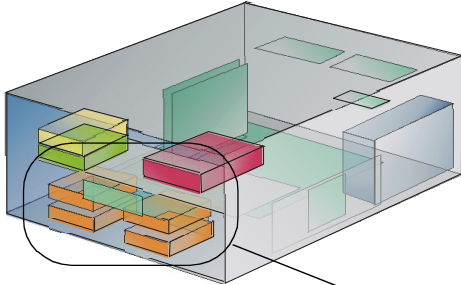
In normal operation the lower front panel should not need to be removed. The panel should only be removed when replacing a faulty drive or swapping an entire volume between system units.

18.6.3.2 Location

The four drive caddies are now visible. SCSI ID's are used to identify disks when performing volume analysis. Refer to [“18.11.6 Analysing a formatted volume”](#) on page 18.18 for more information.

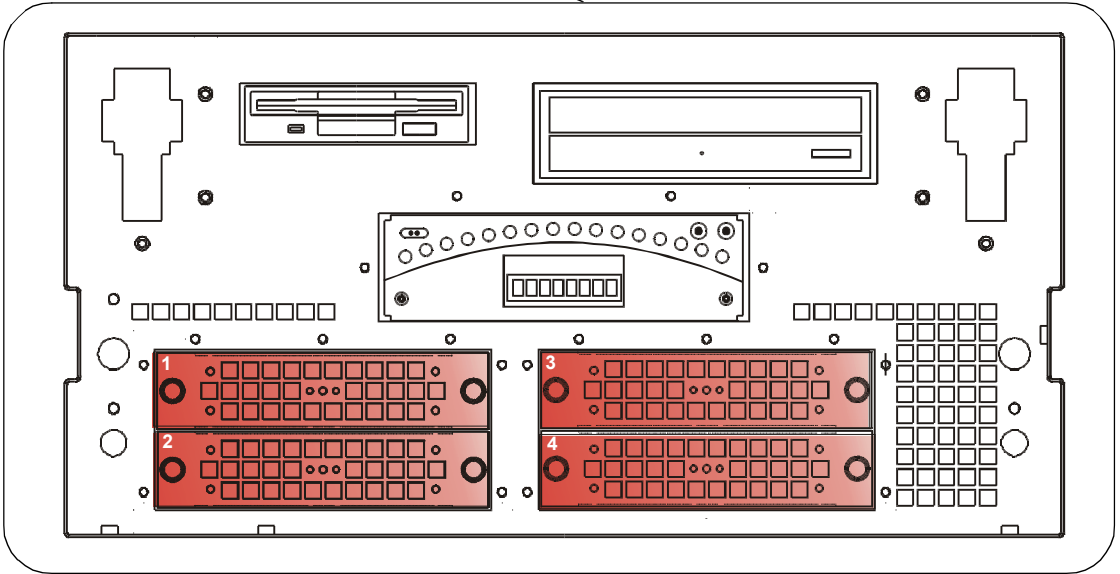
F-140 5U Clarity system unit factory clip drive location and identification within chassis

Isometric view



| Label | Video/Audio storage | Audio only storage |
|-------|---------------------|---------------------|
| 1 | Drive A (SCSI ID 0) | Drive A (SCSI ID 0) |
| 2 | Drive B (SCSI ID 1) | |
| 3 | Drive C (SCSI ID 2) | |
| 4 | Drive D (SCSI ID 3) | |

Front view



18.7 Drive failure

If a drive failure is experienced, the entire volume will not become accessible from the Clip Explorer and it will not mount when the Clarity (CG Tools) software is re-started. You will need to ascertain which drive is faulty and then replace it with a drive of identical specification, matching the other drives in the volume.

18.7.1 2U Clarity systems

Each drive caddy supports a light pipe providing a drive status indicator, located on the SCSI backplane, to be viewable from the front of the chassis. If a disk is faulty or is not being accessed, it will fail to show any activity. Refer to [“19.1.1 Drive status LED’s”](#) on page 19.1 for more information.

18.7.2 3U Clarity systems

Each drive caddy supports a light pipe providing a drive status indicator, located on the SCSI backplane, to be viewable from the front of the chassis. If a disk is faulty or is not being accessed, it will fail to show any activity. Refer to [“19.2.2 Drive status LED’s”](#) on page 19.3 for more information. There are also four LED’s on the system unit front panel that display disk activity for the two SATA system hard disks and the two SCSI hard disks that form the selected internal clip storage option. Refer to [“19.2.3.1 System status LED’s”](#) on page 19.4 for more information.

18.7.3 5U Clarity systems

There are four blue LED’s on the system unit front panel that display disk activity for each of the disks in the volume. If a disk is faulty or is not being accessed, it will fail to show any activity. Refer to [“19.3.2.1 System status LED’s”](#) on page 19.6 for more information.

18.7.4 Important

Because data is split equally over the entire disk set (volume), if a drive fails, then the data on the remaining drives is of no use and as a result the entire volume is rendered unusable. When the faulty drive is replaced, an entire volume should be formatted and re-striped, returning it to its factory state.

18.7.5 After replacing a faulty drive

Once the faulty drive has been replaced, you can re-create and re-format the volume using the Clarity software. Refer to [“18.11 Clip storage management and configuration”](#) on page 18.15 for more information. After the volume has been re-formatted, you can then restore clip data from any back-ups.

18.8 Drive specification (all systems)

All drives in the volume should be of the same specification to ensure reliability. The criteria for selection is listed below. Only drives matching the following specification should be used:

T-70 Internal storage drive specification

| Characteristic | Specification |
|-------------------|--------------------|
| Interface | Ultra320 SCSI Wide |
| Spindle Speed | 15000 rpm > |
| Average Seek Time | 3.6 ms < |

For guidance on the latest preferred drive manufacturers and models, we recommend that you contact Pixel Power support before purchasing individual replacement disks, additional disks or complete disk volume sets.

18. Clarity Clip Storage and Management [CLARITY]

18.9 Drive removal, replacement and re-fitment

18.9.1 2U and 3U Clarity systems

Before removing the cover to work inside the system, observe the safety guidelines. Refer to “21.2 Electrical safety” on page 21.2 for more information.

18.9.1.1 Required tools

The following tools are required:

F-141 Tools required

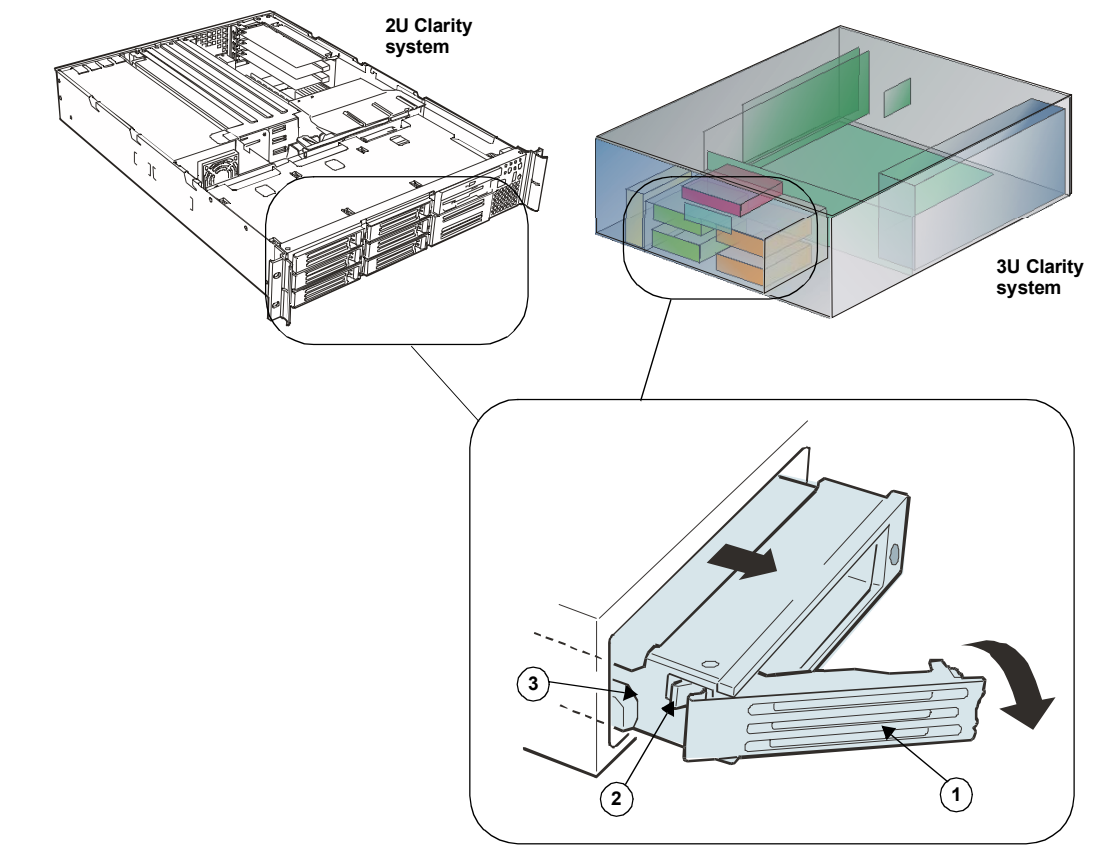
| Tool | Illustration |
|----------------------------|--------------|
| Posidrive No.1 screwdriver | N/A |

18.9.1.2 Removing a drive caddy from a system unit chassis

To remove a drive caddy, follow the steps below:

- On 2U system units, remove the bezel from the front of the chassis. Refer to “18.6.1.1 Removing the system unit front bezel” on page 18.4 for more information. On 3U system units, remove the front panel from the front of the chassis. Refer to “18.6.2.1 Removing the system unit front panel” on page 18.5 for more information.
- On the selected caddy, pull the retention lever (1) toward you until the tab end (2) of the lever is free of the housing slot (3).
- Pull the carrier/drive forward and out of the drive bay.

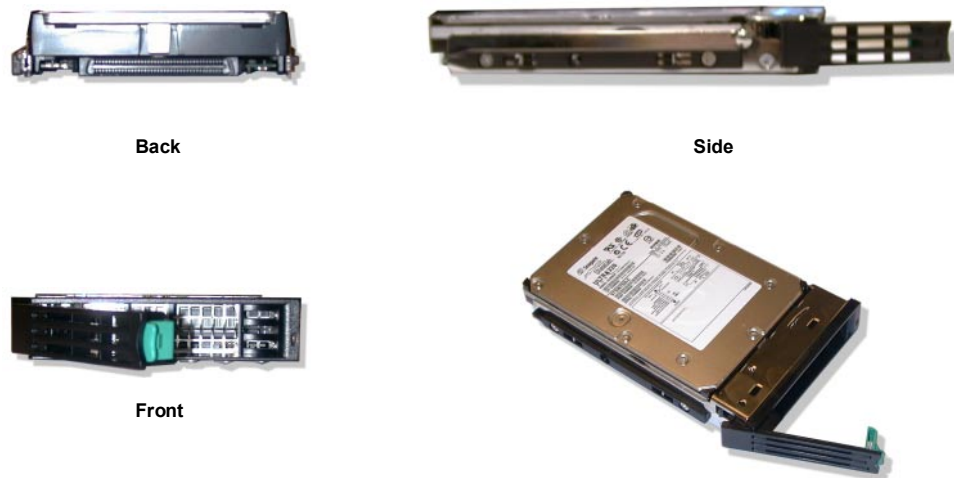
F-142 2U and 3U Clarity system drive caddy removal from system chassis



18. Clarity Clip Storage and Management [CLARITY]

The figure below shows several views of a drive caddy that has been removed from a Clarity 200 (STYLE A) chassis.

F-143 2U and 3U Clarity system drive caddy (containing drive)

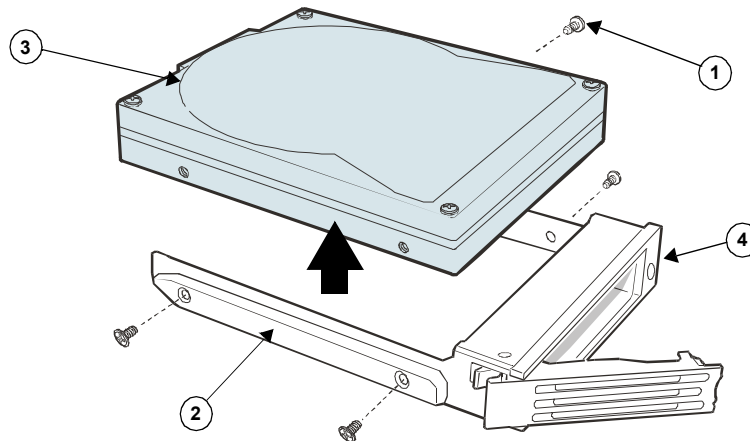


18.9.1.3 Removing and replacing a drive

Once you have removed the caddy from its location in the chassis, you can remove the drive contained within the caddy and replace it if required. Follow the steps below:

1. Place the drive caddy upside down on a safe, flat, anti-static surface.
2. Using a Posidrive No.1 screwdriver, remove the four screws (1) from the slide tracks (2).
3. Lift the drive (3) out of the caddy (4).

F-144 2U and 3U Clarity system drive removal and replacement



4. Remove the new hard drive from its wrapper and place it on an anti-static surface.
5. Set any jumpers and/or switches on the drive according to the drive manufacturer's instructions.
6. Install the new drive into the caddy and re-fit the four screws into the slide tracks.

18.9.1.4 Re-fitting a drive caddy into a system unit chassis

Fitment is the reverse of removal. Refer to [“18.9.1.2 Removing a drive caddy from a system unit chassis”](#) on page 18.8 for more information.

18. Clarity Clip Storage and Management [CLARITY]

18.9.2 5U Clarity systems

Before removing the cover to work inside the system, observe the safety guidelines. Refer to “[21.2 Electrical safety](#)” on page 21.2 for more information.

18.9.2.1 Required tools

The following tools are required:

F-145 Tools required

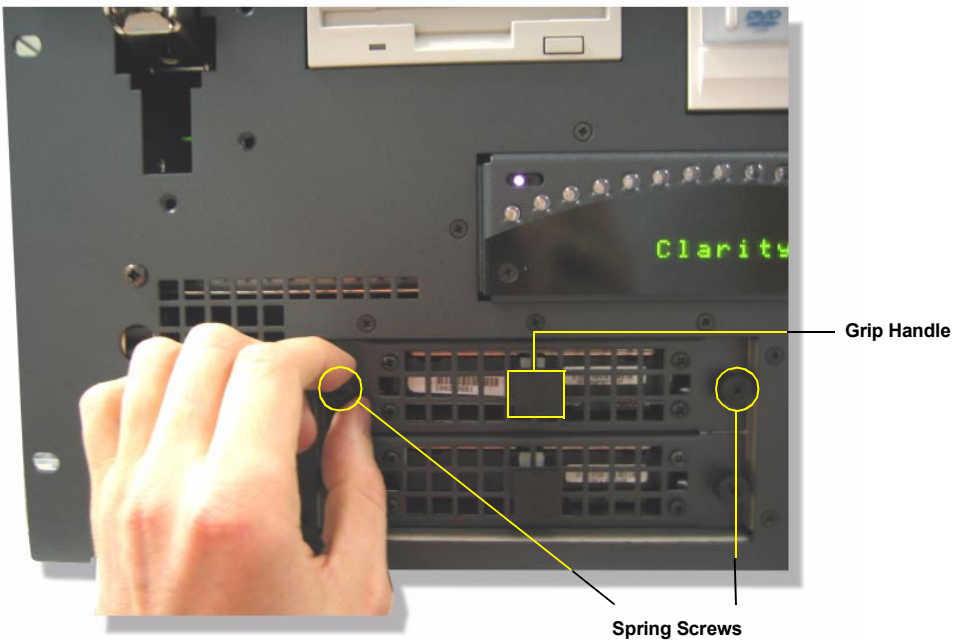
| Tool | Illustration |
|----------------------------|--------------|
| Posidrive No.1 screwdriver | N/A |

18.9.2.2 Removing a drive caddy from a system unit chassis

To remove a drive caddy, follow the steps below:

1. Remove the system unit lower front panel from the front of the chassis. Refer to “[18.6.3.1 Removing the system unit lower front panel](#)” on page 18.6 for more information.
2. Twist the spring screws counter-clockwise until they are completely backed out on each side of the desired caddy that you want to remove.

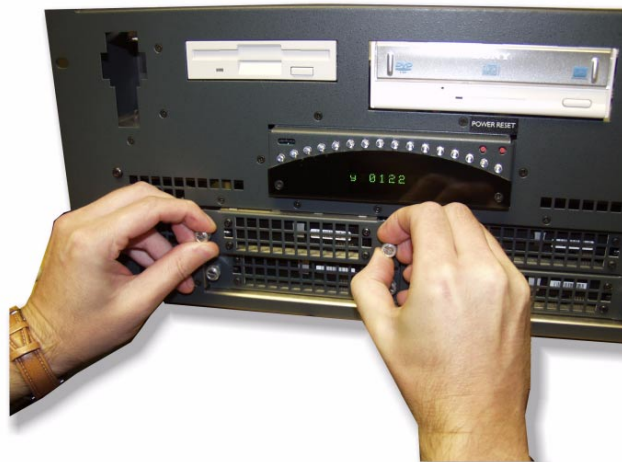
F-146 5U Clarity system drive caddy location



3. Pull the caddy out from the chassis. On systems without the grip handle in the centre of the caddy front panel, use the spring screws as gripping points; otherwise use the grip handle. Initially the first 5mm of travel will be laboured until the SCSI connector on the back of the drive is backed out from the H095 Internal Clip Storage SCSI Backplane.

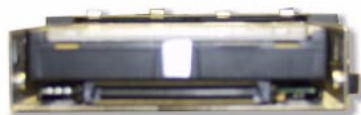
18. Clarity Clip Storage and Management [CLARITY]

F-147 5U Clarity system drive caddy removal from within chassis



The figure below shows several views of a drive caddy that has been removed.

F-148 5U Clarity system drive caddy (containing drive)



Back



Side



Front



18. Clarity Clip Storage and Management [CLARITY]

18.9.2.3 Removing and replacing a drive

Once you have removed the caddy from its location in the chassis, you can remove the drive contained within the caddy and replace it if required. Follow the steps below:

1. Place the drive caddy upside down on a safe, flat, anti-static surface.
2. Using a Posidrive No.1 screwdriver, remove the 4 screws that secure the drive within the caddy.
3. Lift the drive out of the caddy.

F-149 5U Clarity system drive removal and replacement



4. Remove the new hard drive from its wrapper and place it on an anti-static surface.
5. Set any jumpers and/or switches on the drive according to the drive manufacturer's instructions.
6. Install the new drive in the caddy and re-fit the four screws.

18.9.2.4 Re-fitting a drive caddy into a system unit chassis

Fitment is the reverse of removal. Refer to [“18.9.2.2 Removing a drive caddy from a system unit chassis”](#) on page 18.10 for more information.

18.10 Installing additional clip storage drives

18.10.1 2u and 3U Clarity systems

In addition to the drives shipped from the factory that form the selected clip internal clip storage option for Clarity 200, Clarity 300 and Clarity 3000 systems, a system unit can support further hot swappable SCSI hard drives in the remaining spare drive bays (upto a maximum of four drives on Clarity 300/3000 systems and upto six drives on Clarity 200 systems). This can dramatically increase the amount of clip storage space available.

All new drives that are to be included in the volume should be of the same size and specification as those drive currently being used.

To allow for proper airflow and server cooling, all drive bays must contain either a caddy with a hard drive installed or a caddy with an air baffle installed.

Before removing the cover to work inside the system, observe the safety guidelines. Refer to [“21.2 Electrical safety”](#) on page 21.2 for more information.

18.10.1.1 Required tools

The following tools are required:

F-150 Tools required

| Tool | Illustration |
|----------------------------|--------------|
| Posidrive No.1 screwdriver | N/A |

18.10.1.2 Removing a drive caddy from a system unit chassis

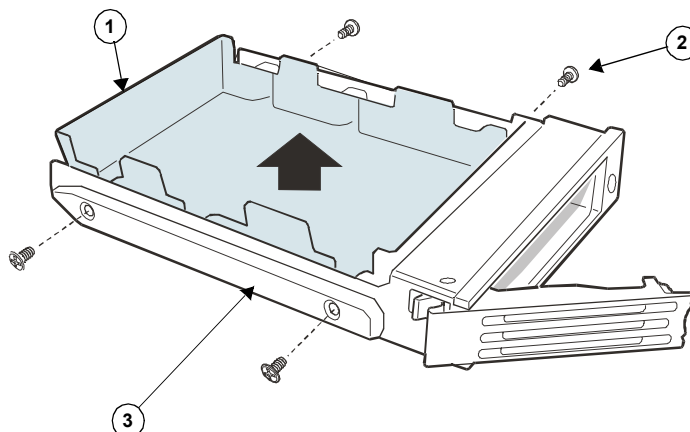
Refer to [“18.9.1.2 Removing a drive caddy from a system unit chassis”](#) on page 18.8 for more information.

18.10.1.3 Installing an additional drive in an empty drive caddy containing an air baffle

Once you have removed an empty caddy from its location in the chassis, you can remove the air baffle and install a new drive. Follow the steps below:

1. Remove the air baffle (1) from the drive carrier by removing the four screws (2) from the slide tracks (3).

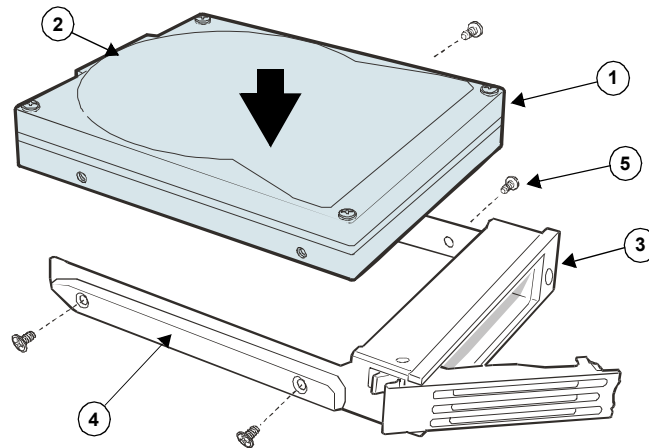
F-151 2U and 3U Clarity system drive air baffle removal



18. Clarity Clip Storage and Management [CLARITY]

2. Store the air baffle for future re-installation in the event you must operate the system unit without a drive in one of the bays.

F-152 2U and 3U Clarity system drive removal and replacement



3. Remove the new hard drive from its wrapper and place it on an anti-static surface.
4. Set any jumpers and/or switches on the drive according to the drive manufacturer's instructions.
5. With the drive circuit-side-down (1), position the connector end (2) so that it is facing the back of the caddy (3).
6. Align the holes in the drive to the holes in the drive caddy slide tracks (4), then re-fit the screws (5) that you previously removed into the slide tracks.

18.10.1.4 Re-fitting a drive caddy into a system unit chassis

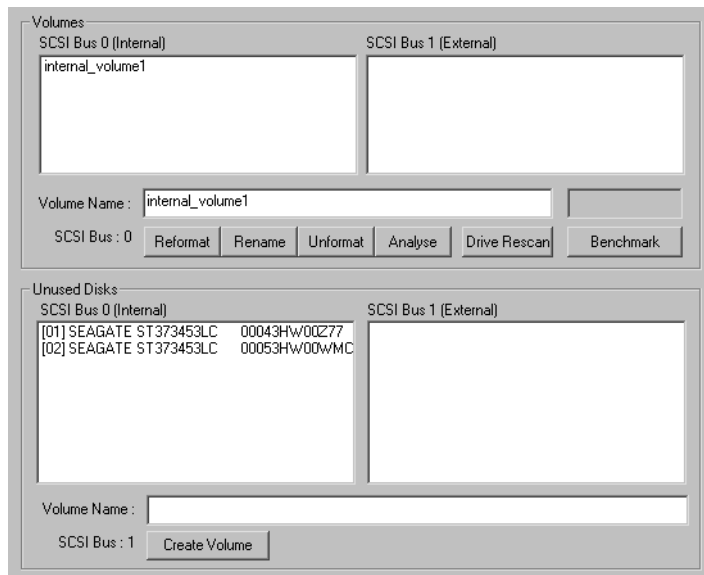
Fitment is the reverse of removal. Refer to [“18.9.1.2 Removing a drive caddy from a system unit chassis”](#) on page 18.8 for more information.

18.11 Clip storage management and configuration

18.11.1 Overview

The management and configuration of the Clarity internal storage AND external clip storage solutions is achieved by using the **Clip Store** dialog tab on the **Local Preferences** dialog box. To display the **Local Preferences** dialog box, select **Options>Local Preferences**.

F-153 Local Preferences dialog box | Clip Store dialog tab



18.11.1.1 When do I need to manage internal clip storage?

The optional internal clip storage volume set is formatted and striped by Pixel Power before delivery, ready for the acquisition of clip data onto the volume. When using the RAID 0 compliant internal clip storage, in circumstances where a faulty drive is replaced or a new drive volume set has been purchased, you will need to format and create the volume before creating new clips or restoring clips from any back-ups made.

Where a single drive is being replaced, the process of creating and formatting the volume will delete all data on the remaining drives. This is due to parity striping not being available.

Refer to [“18.1 About optional disk storage for video/audio clip player”](#) on page 18.1 for more information.

18.11.1.2 When do I need to manage external clip storage?

The optional external clip storage solutions (Chaparral) are formatted and striped by Pixel Power before delivery, ready for the acquisition of clip data onto the volume.

18.11.1.2.1 RAID 0

When using the RAID 0 external storage solution, in circumstances where a faulty drive is replaced or a new drive volume set has been purchased, you will need to create and format the volume before creating new clips or restoring clips from any back-ups made.

Where a single drive is being replaced, the process of creating and formatting the volume will delete all data on the remaining drives. This is due to parity striping not being available.

18. Clarity Clip Storage and Management [CLARITY]

Refer to “[18.1 About optional disk storage for video/audio clip player](#)” on page 18.1 for more information.

18.11.1.2.2 RAID 5

When using the RAID 5 compliant external storage solution, in circumstances where a faulty drive is replaced, parity striping will negate the requirement for re-formatting of the volume. Obviously, if new a drive volume set has been purchased for a RAID 5 compliant external storage solution, then it will require creating and formatting before it can be used.

18.11.1.3 Internal storage volume naming conventions

When an optional internal clip storage volume is formatted and striped by Pixel Power before delivery, it is named using the following convention:

Clar[n] - [nnn] [i]

T-71 Internal storage volume naming conventions

| Variable | Description | Available settings | Description |
|----------|--|--------------------|-------------------------|
| [n] | System unit model identity | 2 | Clarity 200 |
| | | 3 | Clarity 300 |
| | | 5 | Clarity 500 |
| [nnn] | Last three characters of system unit serial number | | |
| [i] | Internal volume identifier | i | Internal storage volume |

So for example, an internal clip store volume on a Clarity 300 system with the serial number H105A007 would be named `Clar3-007-i`.

18.11.1.4 External storage volume naming conventions

When an optional external clip storage (Chaparral) volume is formatted and striped by Pixel Power before delivery, it is named using the following convention:

[storage type] - [nnn]

T-72 External storage (Chaparral) volume naming conventions

| Variable | Description | Available settings | Description |
|----------------|-----------------------------|--------------------|---|
| [storage type] | Storage type of volume | RAID | Full RAID 5 compliant storage system featuring the optional RAID controller. |
| | | JBOD | JBOD (Just a Bunch Of Disks), offering RAID 0 compliance (striping), but pre-prepared for optional RAID 5 compliance using an optional RAID controller upgrade. |
| [nnn] | Serial number (Pixel Power) | | |

For more information on physical installation and maintenance, refer to “[21.11.2 Installing an optional Chaparral 2RU SCSI external storage unit](#)” on page 21.43 for more information.

18.11.2 Creating a volume

Follow the steps below to create a volume from the internal clip storage volume set or from an external storage volume set:

1. Check that the volume set is shown in the **Unused Disks** group box.
2. Enter the desired name for the volume set in the **Volume Name** text box. There is a limit of 32 characters.
3. Select **Create Volume** to start the process.

18.11.3 Formatting or re-formatting a volume

Follow the steps below to format a new volume or re-format an existing volume:

If re-formatting an existing volume, ensure that any desirable clip material is archived before starting the formatting process. Once formatted, previous clip data is NOT recoverable as it is deleted from the volume.

1. Select the desired volume from the **Volumes** group box.
 2. Select **Reformat**.
A confirmation message appears asking if you want to format the selected volume.
 3. Select **Yes** to format or **No** to cancel the operation.
-

After formatting a new volume, it will be accessible by the Clip Explorer.

18.11.4 Renaming an internal (SCSI 0) volume

Follow the steps below to rename an existing internal (SCSI 0) volume:

If you are renaming an existing internal volume on the host system unit that is being used as a remote clip store by another client Clarity system unit within your workgroup/network, the remote clip store will have to be reassigned on the client after the internal volume has been renamed.

1. Select the internal volume set from the **SCSI Bus 0** list box in the **Volumes** group box.
2. Select **Rename**.
A confirmation message appears asking if you want to format the selected volume.
3. Select **Yes** to format or **No** to cancel the operation.

18.11.5 Un-formatting a formatted volume

Follow the steps below to un-format an existing formatted volume:

Ensure that any desirable clip material is archived before starting the formatting process. Once un-formatted, all previous clip data will become un-accessible as the volumes' boot sector is deleted.

1. Select the desired volume from the **Volumes** group box.
 2. Select **Unformat**.
A confirmation message appears asking if you want to format the selected volume.
 3. Select **Yes** to format or **No** to cancel the operation.
-

After un-formatting a volume, it will not be accessible by the Clip Explorer.

18. Clarity Clip Storage and Management [CLARITY]

18.11.6 Analysing a formatted volume

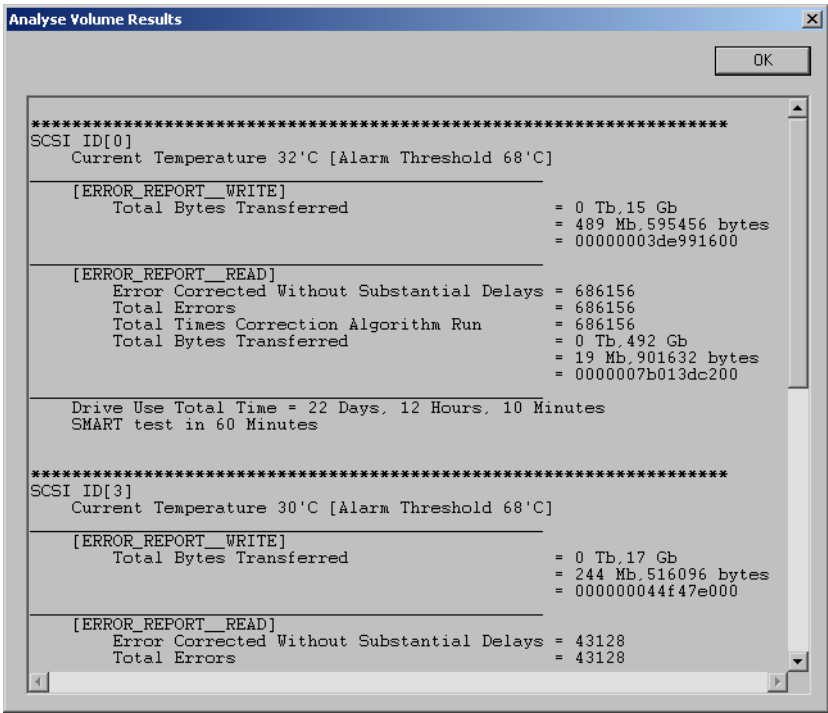
You can analyse a volume to check its operational status. A status log is produced for reference.

Pixel Power support may request this status log if you are experiencing problems with the volume.

Follow the steps below to analyse an existing formatted volume:

- 1. Select the desired volume from the **Volumes** group box.
- 2. Select **Analyse**. The **Analyse Volume Results** dialog box is displayed.

F-154 Analyse Volume Results dialog box



At the same time, a .TXT log file is written to the Hardware folder in your chosen CG Tools installation folder on the local hard disk. The filename has the same name as the volume you have analysed, but is prefixed with DiskLog_e.g. DiskLog_internal_volume1.txt.

18.11.7 Performing a SCSI re-scan

You can manually re-initialise the SCSI drive system. This is the same operation that is conducted automatically when a system unit is started or re-booted. It should be used in situation where a new external storage volume set has been added or removed. Follow the steps below to re-scan the SCSI drive system:

- 1. Select **Drive Rescan**.

A status message appears asking if you want to rescan.

18.11.8 Benchmarking volume read performance

You can test a selected volumes' disk read performance in megabytes per second (MB/s). Follow the steps below:

- 1. Select the desired volume from the **Volumes** group box.
- 2. Select **Benchmark**.

The current reading data transfer rate is displayed in the status box above the **Benchmark** button.



18.12 Clip store emulation

You can specify a path that the current system will use to mimic a clip drive within a Clarity unit. The emulated clip drive will appear in the Clarity Explorer, enabling you to create, copy, preview and use clips on systems running Clarity PREP or on Clarity systems without a clip store.

The presence of an emulated clip store enables Clarity PREP to use jobs created on Clarity systems that contain clips and also enables the CG Tools software to generate meaningful images when editing, previewing and generating browse pictures for the Pixel Power Control Centre.

When copying to a machine without a clip store, the job copy process can now either copy the entire clip to a large .PPV file, or it can create a small .PPV file that contains just the clip header information and the selected browse frame.

This means that the non-clip capable machine can still preview, edit and use the job with all the necessary information available, but without using large amounts of disk space or requiring massive amounts of network bandwidth during the copy.

The management and configuration of emulated stores is achieved using the **Clip Store Emulation** dialog tab on the **Local Preferences** dialog box. To display the **Local Preferences** dialog box, select **Options>Local Preferences**.

For more information on how to work with the **Clip Store Emulation** dialog tab, refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Local Preferences dialog box" section in the "Dialog boxes" section.

18.13 Testing clip storage and learning more about using clips

For testing purposes, an example clip is loaded onto internal storage and external storage clip solutions during manufacturing/testing at Pixel Power. You can use this clip to test that the storage volume is functioning correctly.

For more information on testing clip storage, refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Basic configuration and system test" section in the "Getting Started" section.



H059W004 INDEX KEYWORD
[\[basic configuration\]](#)

18.13.1 Video clip creation, foreground video clip insertion and playback settings

Clip creation is achieved using the **Clip Creation (Creation)** control tab on the **Graphic Tools**. It enables the configuration of the first clip image file in a consecutively numbered sequence OR a single video clip of a supported format which can then be compiled into a video clip for use with the CG Tools software. Use the **Create Video Clip** tool from the **Cel and Clip** toolbox on the **Graphic Tools** toolbar to import the first image or clip of a supported format.



Control over position, aspect ratio and clip compilation is achieved using the **Cel and Clip** control set on the **Graphic Tools**.

Clip playback settings for clips inserted into a page foreground are configured using the **Clip Playback Settings (Clip)** control tab on the **Graphic Tools**. This control tab is displayed when either:



- a) the first clip image file in a consecutively numbered sequence has been inserted using the **Create Video Clip** tool from the **Cel and Clip** toolbox on the **Graphic Tools** toolbar and then subsequently compiled using the controls on the **Cel and Clip** control set;

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- b) a compiled video clip has been inserted using the **Paste Clip** tool from the **Cel and Clip** toolbox on the **Graphic Tools** toolbar.

For more information on creating and inserting video clips, refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Graphical User Interface (GUI) tour" section in the "Getting Started" section.



H059W004 INDEX KEYWORD

[\[create video clip\]](#) [\[gui\]](#) [\[paste clip\]](#) [\[basic configuration\]](#)

18.13.2 Specifying page background clips and configuring playback settings

18.13.2.1 Video clips



The specification of a video clip for a page background is achieved using the **Background** dialog tab on the **Page Settings** dialog box. The **Background** dialog tab can be displayed by selecting **Change Background** from the **Edit** menu. Alternatively, either right-click within the **Graphic Edit** window and select **Change Background** from the shortcut menu that appears or click on the **Change Background** tool on the **Page** toolbar.

For more information on how to work with the **Background** dialog tab, refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Page Settings dialog box" section in the "Dialogs boxes" section.

Page background video clip playback settings are configured using the **Video Clip Playout** dialog box. The **Video Clip Playout** dialog box can be displayed by selecting **Set Loop/Pause** on the **Background** dialog tab on the **Page Settings dialog** box.

For more information on how to work with the **Video Clip Playout** dialog box, refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Video Clip Playout dialog box" section in the "Dialogs boxes" section.



H059W004 INDEX KEYWORD

[\[page settings\]](#) [\[page background\]](#) [\[video clip playout\]](#) [\[set loop/pause\]](#)

18.13.2.2 Audio clips

The specification of audio clips and the subsequent configuration of playback settings is achieved using the **Audio** dialog tab on the **Page Settings** dialog box. The **Page Settings** dialog box can be displayed by selecting **Page>Edit Settings**.

For more information on how to work with the **Audio** dialog tab, refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Page Settings dialog box" section in the "Dialogs boxes" section.



H059W004 INDEX KEYWORD

[\[page settings\]](#) [\[audio\]](#)

18.14 Backing up and transferring clips

Backing up clips is vitally important to ensure minimum down-time in the event of a volume failure. Your backup procedure should be dictated by how often new content is added to the clip store.

If your system unit has a Gigabit ethernet facility (1000 base-T), then individual clips, folders or the entire internal clip volume can be copied reasonably quickly to a remote location within your network infrastructure and then subsequently backed up by a tape drive. If new clips are compiled on a daily basis, then we would recommend that the volume is backed up at the end of each working day. If the clip store is subject to more restrained usage and new clips are rarely added (for example in instances where all content is created on the clip store when the unit system is installed), then a less regimented approach may be suitable.

18.14.1 Using the Clip Explorer to backup clips

This system is easy to configure, but has the following restrictions

- a) files can only be copied FROM the system unit TO the network location;
- b) the operation is required to be completed manually by an operator using the Clarity software.

Using normal Microsoft Windows methods, simply create a drive mapping to the PC to which you want to copy clip data. Because Windows mapped drives can be viewed using the Clip Explorer, simply view the mapped drive using the Clip Explorer and then drag any content from the internal volume to the mapped network location.

Because clips are inherently large files, the copying process may take an extended period of time, depending on the number and size of clips being copied.

18.14.2 Using the Clarity FTP server to transfer/backup clips

[6.4.0.0]

This section is only applicable to systems running version 6.4.0.0 onwards of the CG Tools software.

18.14.2.1 Background information on the transfer of clips over FTP

Audio and video clip files, whilst stored on Clarity clip volumes, have always existed as single files without file extensions. Previously, there was a limited ability to copy video clips to PC systems using FTP, but the browse image for video clips was stored within an obscure data file and could not be seen, and as such identifying clips was difficult.

When the Job Copy mechanism was updated to handle the copying of clips together with jobs, the .PPA audio file and .PPV video file types were implemented. This improved identification and management of clips outside of the domain of the Clarity clip volume, but there was still no way of transferring clips reliably and easily between back-up systems, remote PC hard drives and other Clarity clip volumes.

To improve the situation, with the release of version 6.4.0.0 of the CG Tools software, we have now updated the FTP server which runs on every Clarity system. The FTP server port now acts as an interpreter between Clarity clip volumes and remote systems, intelligently mapping native clip files without file extensions on the Clarity clip volume to files with the .PPV, .PPA, .JPG, .TIF and .TGA extensions that can be managed outside the domain of the Clarity clip system.

18.14.2.2 Clarity FTP server enables simplified access to clips

With the 6.4.0.0 CG Tools software release, when browsing Clarity clip systems using the Clip Explorer, everything appears as it did before i.e video and audio clips do not have a file extension. When viewing a Clarity clip volume from a remote PC over FTP, clip files now appear in a different way. A single clip data file still physically exists on the Clarity clip volume, but the revised FTP server interprets this file, and depending on the clip type (audio or video) and FTP server port configuration, creates up to four files to aid the copying of the clip from the clip volume to a remote PC.

18. Clarity Clip Storage and Management [CLARITY]

You can configure the FTP server port to create browse images of a desired type and quality.

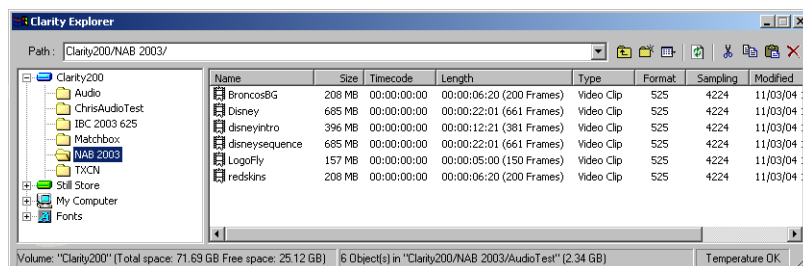
T-73 Files mapped by the Clarity FTP server

| | File | Description | Maps to ? on Clip volume |
|----------------------|--------------------|-----------------------------------|--------------------------|
| videoclipname | videoclipname.ppv | videoclip data file | videoclip data file |
| | videoclipname.jpg | Clip browse image in JPEG format | |
| | videoclipname.tiff | Clip browse image in TIFF format | |
| | videoclipname.tga | Clip browse image in TARGA format | |
| audioclipname | audioclipname.ppa | audioclip data file | videoclip data file |

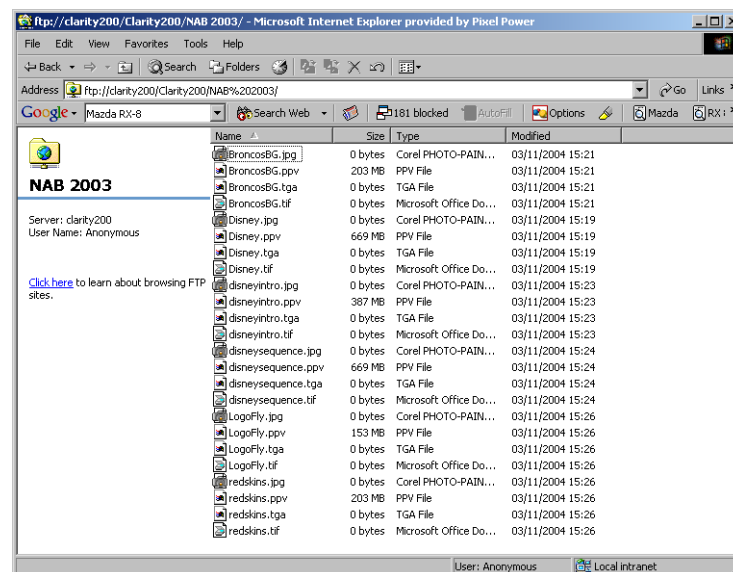
Browse image files do not physically exist on the clip volume at any time. Every time you view a clip volume via FTP; they are created by the Clarity FTP server dynamically at read time, relying on the FTP client reading the header data from the clip data file until the connection is terminated by the server.

It is important to note that the browse images are zero length (0Kb). This may have implications when viewing the Clarity clip volume with your chosen FTP client. Some FTP clients such as Cute FTP will not read back zero length files from the clip volume and thus they will not appear at the client end.

F-155 /NAB 2003 folder on Clarity 200 clip volume viewed using host Clip Explorer



F-156 /NAB 2003 folder on Clarity 200 clip volume viewed using FTP connection

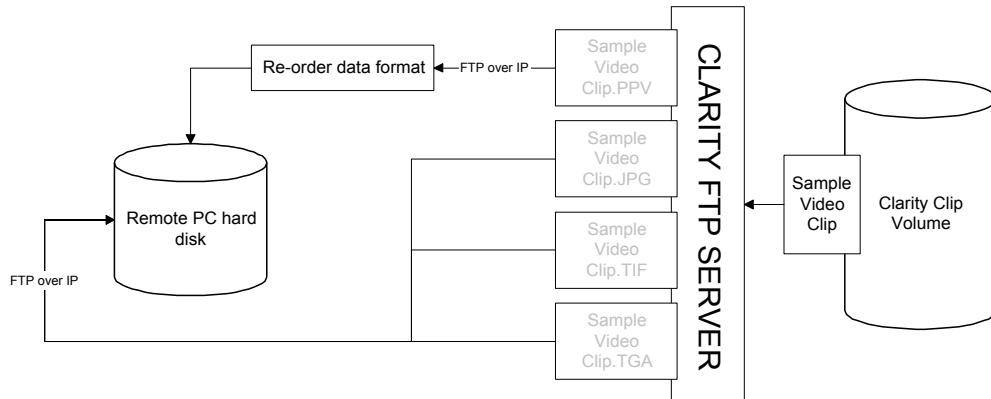


18. Clarity Clip Storage and Management [CLARITY]

18.14.2.3 What happens when I copy these new files?

When copying the main clip data file for either clip file type (.PPV or .PPA), the information within this data file is re-ordered from its original state by the FTP server to enable it to be written to a single disk correctly.

F-157 Copying clips via FTP from Clarity clip volume to remote PC hard disk



18.14.3 Making use of .PPA/.PPV files and supporting conversion tools [6.4.0.0]

To assist the copying of audio and video clip files using FTP between PC systems and Clarity clip systems, the .PPA audio file type and .PPV video file types were implemented some time ago.

Now that the Clarity FTP server features a mechanism to handle the interchange of files of this format, the ability to push and pull clips from Clarity clip systems is much easier.

With a definitive file format available for audio and video clips outside of the Clarity clip system domain, we have introduced the first or a possible number of conversion tools. It was identified as being desirable to convert audio files of several differing formats to the .PPA format, for subsequent copying to Clarity clip systems using the functionality offered by the updated Clarity FTP server.

For more information on how to work with the command line conversion tools, refer to the CG Tools Reference (H059W004). Refer to “[1.6 Further resources](#)” on page 1.4 for more information. This manual is available in both .PDF and HTML Help formats and features an explicit "Command line .PPV video and .PPA audio conversion " section in the "Appendices" section.



H059W004 INDEX KEYWORD
[\[command line tools\]](#)

18.14.4 Remote copying of clip content to and from clip stores [6.4.0.0]

Clip content can be "pushed" and "pulled" between Clarity clip volumes and remote PC's using the .PPV and .PPA file formats over an FTP connection.

Before reading this section, learn more about the Clarity FTP server by referring to “[18.14.2.2 Clarity FTP server enables simplified access to clips](#)” on page 18.21 for more information. Also, learn more about the introduction of .PPA/.PPV files and supporting conversion tools by referring to “[18.14.3 Making use of .PPA/.PPV files and supporting conversion tools \[6.4.0.0\]](#)” on page 18.23 for more information.

In a typical simple scenario, where new audio content is required on a Clarity clip volume:

- The audio content is recorded from the source and made available in a format suitable for the PPAudioConvert tool on the remote PC's hard disk.
- The audio is converted into the .PPA format using the PPAudioConvert tool.

18. Clarity Clip Storage and Management [CLARITY]

- c) An FTP connection to the Clarity clip volume is started from the remote PC.
- d) The .PPA file is transferred over the FTP connection.
- e) The .PPA file is subsequently used by the Clarity software.

With this new functionality available, automation systems can also take advantage by accessing the PPAudioConvert tool using the COM interface to convert audio files and then copy them by initiating FTP connections to desired Clarity clip volumes within the automation systems' network infrastructure.

19. System Monitoring and Configuration

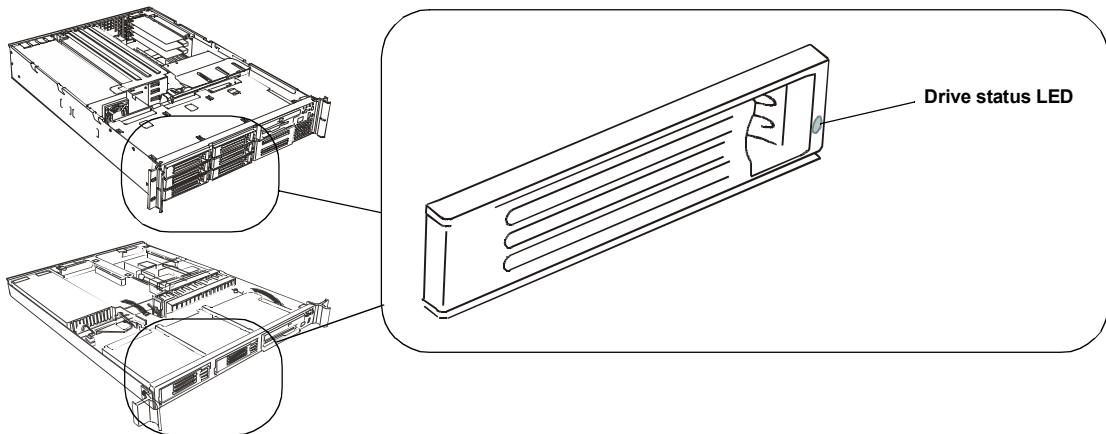
[CLARITY]

19.1 1U and 2U Clarity system physical monitoring

19.1.1 Drive status LED's

Each drive tray supports a light pipe enabling a drive status indicator, located on the backplane, to be viewable from the front of the chassis.

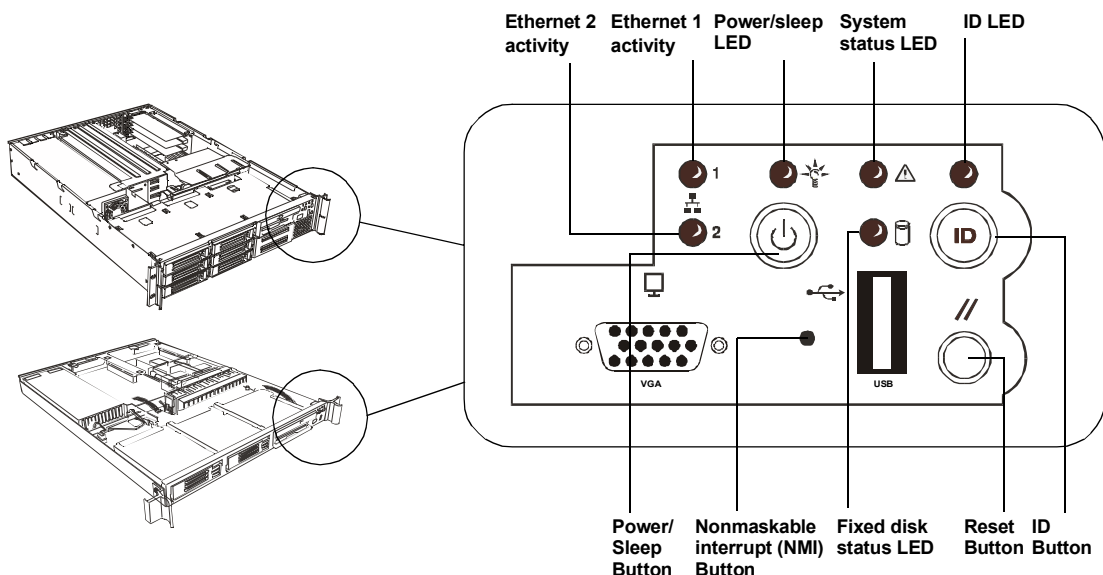
F-158 1U and 2U Clarity system drive status LED positions



19.1.2 Front panel

1U and 2U Clarity system units feature the following front panel, enabling clear visual representation of system and sub-system status via LED's.

F-159 1U and 2U Clarity system front panel

















19. System Monitoring and Configuration [CLARITY]

F-160 1U and 2U Clarity system unit front panel display button descriptions

| Button | Description |
|--------------------|---|
| Power/Sleep | Toggles the system unit power on/off or sleep button for ACPI compliant operating systems. |
| Reset | Re-boots and initializes the system unit. |
| NMI | Pressing the recessed button with a paper clip or pin issues a non-maskable interrupt and puts the system unit in a halt state for diagnostic purposes. |
| ID | Toggles on/off the front panel ID LED and the baseboard ID LED. The baseboard ID LED is visible through the rear of the chassis, enabling the location of the correct system unit from behind a rack. |

F-161 1U and 2U Clarity system unit front panel display status LED descriptions

| LED | Description | |
|------------------------------------|--|---|
| Power/sleep | Continuous green light indicates the system unit has power applied to it. |  |
| | Blinking green light ^a indicates the system unit is sleeping. |  |
| | No light indicates the system unit does not have power applied to it (other than 5V standby power). |  |
| Ethernet 1/2 activity | Continuous green light indicates activity between the system unit and the network to which it is connected. |  |
| System status | Continuous green light indicates the system unit is operating normally. |  |
| | Blinking green light indicates the system unit is operating in a degraded condition. |  |
| | Continuous amber light ^b indicates the system unit is in a critical or non-recoverable condition. |  |
| | Blinking amber light ^c indicates the system unit is in a non-critical condition. |  |
| | No light indicates POST/system unit stop. |  |
| Fixed disk drive status LED | Random blinking green light indicates fixed disk drive activity (SCSI or IDE). |  |
| | Continuous amber light ^d indicates fixed disk drive fault (SCSI or IDE). |  |
| | No light ^e indicates no fixed disk drive activity nor fault (SCSI or IDE). |  |
| ID LED | Continuous blue light indicates ID button is depressed. |  |
| | No light indicates ID button is not depressed. |  |

a. The Power LED sleep indication is maintained on standby by the chipset. If the system is powered down without going through BIOS, the LED state in effect at the time of power off will be restored when the system is powered on until the BIOS clears it. If the system is not powered down normally, it is possible that the Power LED will be blinking at the same time that the System Status LED is off due to a failure or configuration change that prevents the BIOS from running.

b. The Amber status takes precedence over the Green status. When the Amber LED is on or blinking, the Green LED is off.

c. The Amber status takes precedence over the Green status. When the Amber LED is on or blinking, the Green LED is off.

d. In order for a hard disk fault indication to occur, either an Intelligent Platform Management Interface (IPMI) based satellite management controller must send a Set Fault Indication command to the Baseboard Management Controller (BMC), or the system board must be used with the 2U SR2300 hot swappable backplane.

e. Also off when the system is powered off or in a sleep state.

19.2 3U Clarity system physical monitoring

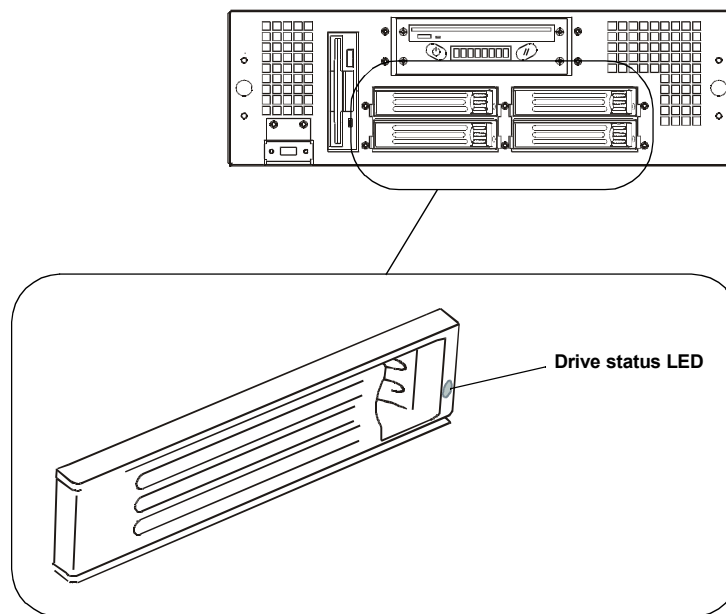
19.2.1 System alarm

An audible alarm is sounded by the system in some circumstances. The sounding of the audible alarm should be cross referenced with the message being displayed on the front panel display. Refer to “[19.2.5 Eight character dot matrix display](#)” on page 19.5 for more information. The system alarm can also trigger a GPO event if desired. Refer to “[19.6 Serial and GPI monitoring](#)” on page 19.15 for more information.

19.2.2 Drive status LED's

Each drive tray supports a light pipe enabling a drive status indicator, located on the backplane, to be viewable from the front of the chassis. Drive activity is mirrored by the associated system status LED's on the front panel display. Refer to “[19.2.3.1 System status LED's](#)” on page 19.4 for more information.

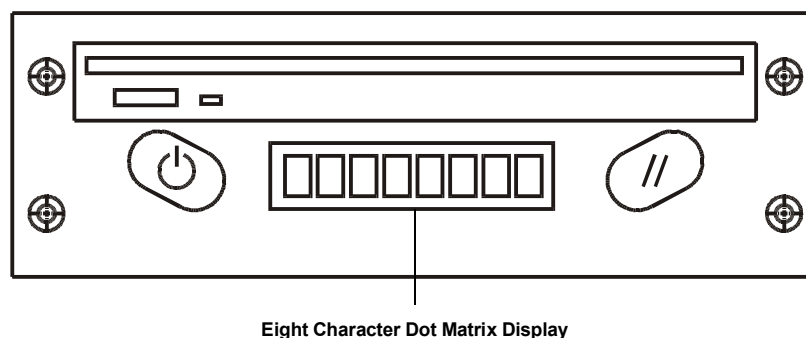
F-162 3U Clarity system unit drive status LED positions



19.2.3 Front panel display

The system unit features the following front panel display, enabling clear visual representation of system and sub-system status via LED's and an eight character dot matrix display.

F-163 3U Clarity system unit front panel display

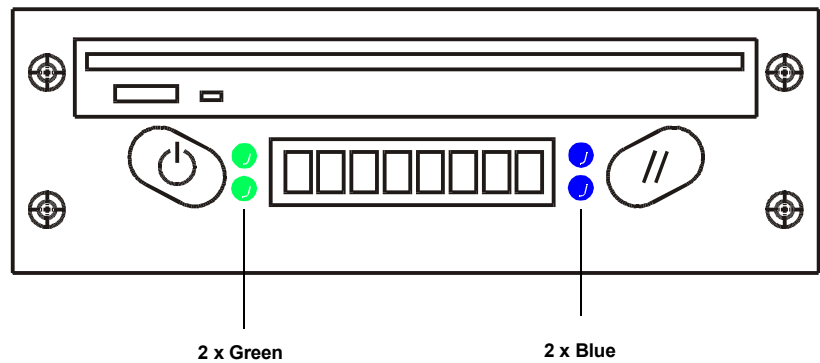


19. System Monitoring and Configuration [CLARITY]

19.2.3.1 System status LED's

The display features a number of Light Emitting Diodes (LED's) which indicate the status of various system and sub-system elements. The picture below shows the location of all status LED's featured on the front panel display.

F-164 3U Clarity system unit front panel status LED locations



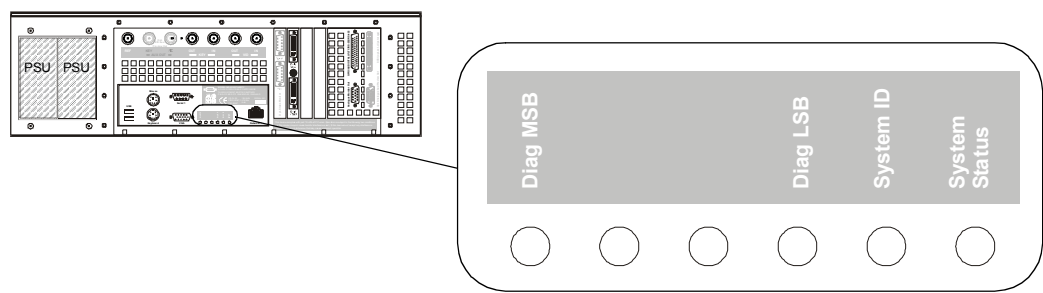
T-74 3U Clarity system unit front panel display status LED descriptions

| LED | Description |
|-----------|---|
| 2 x Green | Displays disk activity for the two internal SATA system hard disks in a RAID 1 array. |
| 2 x Blue | Displays activity for the two internal clip storage hard disks (if fitted). |

19.2.4 Rear panel Intel® server board system status LED's

The rear panel features six system status LED's (only four are labelled and are of relevance) that show the status of the Intel® server board. The picture below shows the location of status LED's featured on the rear panel:

F-165 3U Clarity system unit rear panel status LED locations



19.2.4.1 Further information^a

Please refer to the following Intel® Corporation documentation for further information on the status of these LED's.



F-166 Intel® documentation relevant to server boards used within 3U Clarity systems

| Intel® Server Board | Technical Product Specification |
|---------------------|---|
| SE7525GP2 | http://download.intel.com/support/motherboards/server/sb/se7320sp2_se7525gp2_tps_40.pdf |
| SE7525RP2 | http://download.intel.com/support/motherboards/server/sb/se7320ep2_se7525rp2tps_10.pdf |

^a Subject to change. Information may not match the server board installed in your system. We not responsible for the accuracy or location of other manufacturers technical documentation.

19.2.5 Eight character dot matrix display

The display features an eight character green dot matrix display which indicates the status of various system and sub-system elements. The display will scroll if messages are greater than 8 characters. The operational status and hardware monitoring messages that can be displayed are detailed below.

T-75 3U Clarity system unit front dot matrix display messages

| Message | Additional String (x, n) | Cause/Status | Alarm | Action |
|-----------------------------------|---|---|-------|---|
| CLARITY | | Default | | None |
| RESET (n) | Countdown timer | Countdown to system reset whilst pressing and holding Reset button until the counter has elapsed | | |
| CLARITY>STANDBY | | System in standby mode | | |
| POWER (n) | Countdown timer | Countdown to system standby OR power on whilst pressing and holding Power/Standby button until the counter has elapsed | | |
| ALARM CANCEL | | Displayed when the Power/Standby and Reset buttons are pressed together during a system alarm | | |
| PSU FAIL | | Redundant PSU failure | YES | Replace PSU module or entire PSU |
| FAN FAIL | | Fan failure in system | YES | Seek assistance from your dealer or Pixel Power support |
| OVERHEATING: TEMPERATURE AT (n) C | Internal chassis temperature in degrees celsius | System overheating due to possible disruption of airflow by fan failure, blocked air filter, insufficient rack space etc. | YES | |

19.3 5U Clarity system physical monitoring

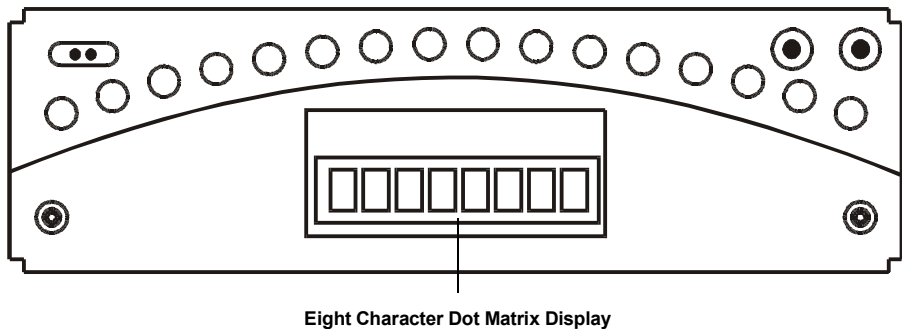
19.3.1 System alarm

An audible alarm is sounded by the system in some circumstances. The sounding of the audible alarm should be cross referenced with the message being displayed on the front panel display. Refer to “19.3.3 Eight character dot matrix display” on page 19.7 for more information. The system alarm can also trigger a GPO event if desired. Refer to “19.6 Serial and GPI monitoring” on page 19.15 for more information.

19.3.2 Front panel display

The system unit features the following front panel display, enabling clear visual representation of system and sub-system status via LED’s and an eight character dot matrix display.

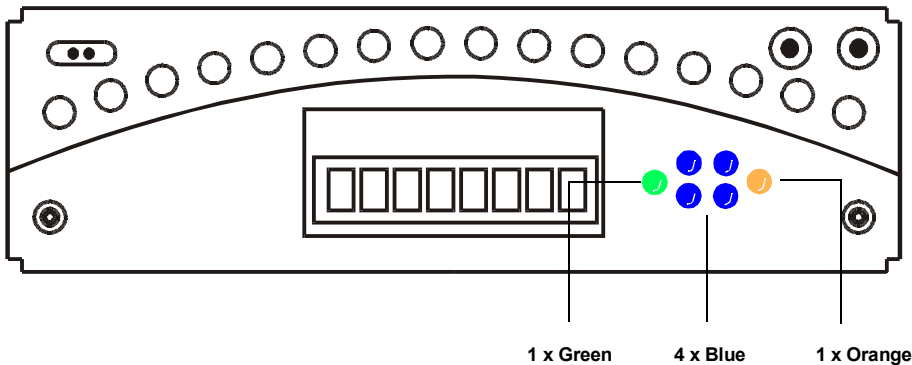
F-167 5U Clarity system unit front panel display



19.3.2.1 System status LED’s

The display features a number of Light Emitting Diodes (LED’s) which indicate the status of various system and sub-system elements. The picture below shows the location of all status LED’s featured on the front panel display.

F-168 5U Clarity system unit front panel status LED locations



T-76 5U Clarity system unit front panel display status LED descriptions

| LED | Description |
|------------|---|
| 1 x Green | Displays disk activity for the internal system hard disk. |
| 4 x Blue | Displays activity for the four internal clip storage hard disks (if fitted). |
| 1 x Orange | Flashes when problems are being experienced with the system power, PSU or rack temperature. Accompanied by audible alarm. |

19. System Monitoring and Configuration [CLARITY]

19.3.3 Eight character dot matrix display

The display features an eight character green dot matrix display which indicates the status of various system and sub-system elements. The display will scroll if messages are greater than 8 characters. The operational status and hardware monitoring messages that can be displayed are detailed below.

T-77 5U Clarity system unit front dot matrix display messages

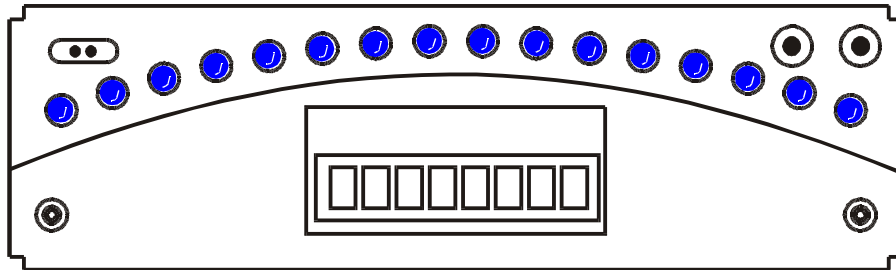
| Message | Additional String (x, n) | Cause/Status | Alarm | Action |
|---|---|---|-------|---|
| CLARITY | | Default | | None |
| POWER ON | | Powering system | | |
| RESETTING | | Resetting system | | |
| SHUTDOWN | | Power down sequence | | |
| CLARITY>STANDBY | | System in standby mode | | |
| "USER DEFINED" | | User defined string used in place of CLARITY during normal system operation | | |
| PSU MODULE (n) FAIL | 1 | Module 1 failure in redundant PSU | YES | Replace PSU module or entire PSU |
| POWER SUPPLY MODULE (n) FAIL | 2 | Module 2 failure in redundant PSU | | |
| | 3 | Module 3 failure in redundant PSU | | |
| POWER SUPPLY FAIL: (x) | 3V3 | 3.3V power rail failure | YES | Seek assistance from your dealer or Pixel Power support |
| | 5v STANDBY | 5V standby power rail failure | | |
| | 5V | 5V power rail failure | | |
| | 12V CPU | 12V CPU power rail failure | | |
| | 12 IO | 12V I/O power rail failure | | |
| | MINUS 12V | -12V power rail failure | | |
| | MULTIPLE RAILS | Multiple power rail failure | | |
| FAN FAIL | | Fan failure in system | YES | |
| POWER GOOD FAIL | | PCB based failure | | |
| OVERHEATING: TEMPERATURE AT (n) C | Internal chassis temperature in degrees celsius | System overheating due to possible disruption of airflow by fan failure, blocked air filter, insufficient rack space etc. | YES | |

19. System Monitoring and Configuration [CLARITY]

19.3.4 Door illumination

Door illumination is provided by the array of blue variable intensity LED's that follow the curvature of the display. The way in which they illuminate can be configured. Refer to [“19.4.2.5 Door Illumination group box”](#) on page 19.11 for more information.

F-169 5U system unit front panel door illumination LED's



19.4 Rack monitoring and configuration via software

System monitoring and related parameters can be configured using the **Rack** dialog tab on the **Local Preferences** dialog box. To display the **Local Preferences** dialog box, select **Options>Local Preferences**.

After selecting the **Rack** dialog tab, the software will initiate a connection with the system monitoring processor and then display the tab. If it is unable to initiate a connection, the dialog tab will remain blank stating:

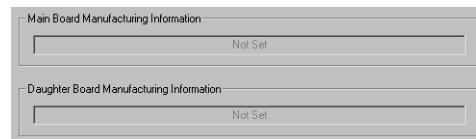
Clarity Application is unable to detect the Rack System Management Processor

19.4.1 Clarity 100, 200, 300 and 3000

The **Rack** dialog tab enables configuration of several settings specific to system unit monitoring.

Only main board manufacturing information is available on Clarity 100, 200, 300 and 3000 systems at this current time.

F-170 Local Preferences dialog box | Rack dialog tab



The subsequent sections detail the controls on this dialog tab.

19.4.1.1 Main Board Manufacturing Information status box

This status box displays manufacturing information for:

- the Clarity 100/200/300 main system PCB (H096 SD Framestore CPU and Input/Output (I/O) PCB);
- the Clarity 3000 main system PCB (H112 Standard Definition (SD) and High Definition (HD) Framestore CPU);

This information is stored on a programmable IC located on the relevant PCB.

Pixel Power support may request this information when dealing with support issues relating to the system.

19.4.1.2 Daughter Board Manufacturing Information status box

Clarity 100/200/300 system units may include the clip playback option in the form of the Standard Definition (SD) Clip Processing and Input/Output (I/O) (H098) PCB. This PCB plugs directly on to the H096 PCB. The manufacturing information for the Clarity 100/200/300 Standard Definition (SD) Clip Processing and Input/Output (I/O) (H098) PCB is shown in this status box. This is stored on a programmable IC located on the H098 PCB.

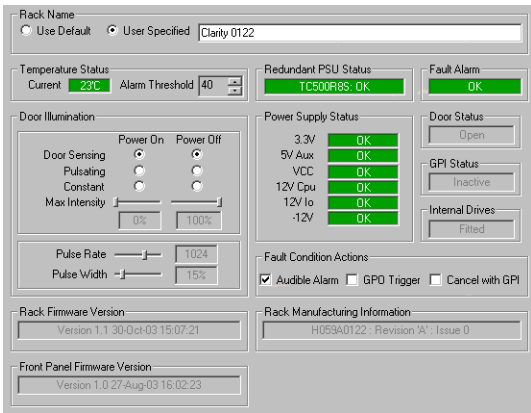
Pixel Power support may request this information when dealing with support issues relating to the system.

19. System Monitoring and Configuration [CLARITY]

19.4.2 Clarity 500 and Clarity 5000

The **Rack** dialog tab enables configuration of several settings specific to system unit monitoring.

F-171 Local Preferences dialog box | Rack dialog tab



The subsequent sections detail the controls on this dialog tab.

19.4.2.1 Rack Name group box

The controls in this group box enable the selection of what is displayed on the system front panel dot matrix display during normal operation. Select either **Use Default** to display the default CLARITY message or select **User Specified** and enter a message in the adjacent text box. Refer to “19.3.3 Eight character dot matrix display” on page 19.7 for more information.

19.4.2.2 Temperature Status group box

The current temperature in degrees celsius (°C) inside the system chassis is shown by the **Current** status box. In the **Alarm Threshold** increment box, type the temperature threshold at which the system alarm will sound, or use the increment and decrement buttons to jog the value up or down.

If the temperature shown by the **Current** status box is below that specified in the adjacent **Alarm Threshold** increment box, **Current** status will be green. In the event that the temperature rises above this threshold, the system alarm will sound, the **Current** status box will turn red and the following message will also be shown on the front panel dot matrix display:

OVERHEATING: TEMPERATURE AT (n) C

Refer to “19.3.3 Eight character dot matrix display” on page 19.7 for more information.

19.4.2.3 Redundant PSU Status status box

If the system is fitted with the optional redundant power supply unit (PSU), this box indicates the status of the power supply and its PSU modules. If all is well, status is shown as (PCU MODEL) OK, where PCU MODEL is the model of the PSU e.g. TC500R8S.

If power to a module is cut, the module itself fails or the module is removed from its enclosure, the system alarm will sound and the **Redundant PSU Status** box will turn red and indicate which module is affected, using the syntax PSU MODULE (N) FAIL, where N is the module in question.

The following message will also be shown on the front panel dot matrix display:

PSU MODULE (n) FAIL

Refer to “19.3.3 Eight character dot matrix display” on page 19.7 for more information.

19. System Monitoring and Configuration [CLARITY]

19.4.2.4 Fault Alarms status box

If for any reason, the system alarm sounds, visual confirmation is shown by the **Fault Alarm** status box.

19.4.2.5 Door Illumination group box

Door illumination is provided by the array of blue LED's that follow the curvature of the display. Door illumination settings can be specified for both power-on and power-down events.

T-78 Local Preferences dialog box | Rack dialog tab | Door Illumination options

| Options | Description |
|----------------------|---|
| Door Sensing | Select this option to illuminate the LED's constantly, only when the system unit door is closed. No other options will have any effect. |
| Pulsating | Select this option to illuminate the LED's using a pulsating effect. |
| Constant | Select this option to illuminate the LED's constantly. |
| Max Intensity | Type the maximum intensity of the LED's in the range 0 to 100%, or use the increment and decrement sliders to change the value up or down. |
| Pulse Rate | Only effective if the Pulsating option is selected. Type the pulse rate in milliseconds (the time between each pulse), or use the increment and decrement sliders to change the value up or down. |
| Pulse Width | Only effective if the Pulsating option is selected. Type how long each pulse will illuminate for in the range 0 to 100% (a percentage of the Pulse Rate value), or use the increment and decrement sliders to change the value up or down. |

19.4.2.6 Power Supply Status group box

The controls in this group box display status information about all internal power rails within the system. If the relevant power rail is good, status will be green. In the event that the rail fails, the system alarm will sound, the relevant status box will turn red and a status message will also be shown on the front panel dot matrix display. Refer to [“19.3.3 Eight character dot matrix display”](#) on page 19.7 for more information.

19.4.2.7 Door Status status box

The status of the system front panel (OPEN or CLOSED) is shown by the **Door Status** status box.

19.4.2.8 GPI Status status box

The status of the status monitor **GPI** 9-pin standard density female D-type connector port on the rear panel (ACTIVE or INACTIVE) is shown by the **GPI Status** status box. Refer to [“19.6 Serial and GPI monitoring”](#) on page 19.15 for more information.

19.4.2.9 Internal Drives status box

Whether internal clip storage drives are fitted to the system is shown by the **Internal Drives** status box (FITTED or NOT FITTED).

19.4.2.10 Fault Condition Actions group box

The controls in this group box enable selection of what notification events are to be actioned during fault conditions.

- Check the **Audible Alarm** box to ensure that the audible system alarm is sounded during fault conditions. If the box is cleared, no alarm will be sounded.
- Check the **GPO Trigger** box to send a trigger during a fault condition from the status monitor **GPI** 9-pin standard density female D-type connector port on the rear panel. Refer to [“19.6 Serial and GPI monitoring”](#) on page 19.15 for more information.

19. System Monitoring and Configuration [CLARITY]

- Check the **Cancel with GPI** box to enable a fault condition to be cancelled by an external GPI trigger to the status monitor **GPI** 9-pin standard density female D-type connector port on the rear panel. Refer to “[19.6 Serial and GPI monitoring](#)” on page 19.15 for more information.

19.4.2.11 Rack Firmware Version status box

The firmware version of the system shown by the **Rack Firmware Version** status box. This is stored on a programmable IC located on the H092 and H108 Power Distribution PCB's.

Pixel Power support may request this information when dealing with support issues relating to the system.

19.4.2.12 Rack Manufacturing Information status box

Manufacturing information, relating to the current system (serial number etc.), is shown by the **Rack Manufacturing Information** status box. This is stored on a programmable IC located on the H092 and H108 Power Distribution PCB's.

Pixel Power support may request this information when dealing with support issues relating to the system.

19.4.2.13 Front Panel Firmware Version status box

The firmware version of the front panel display is shown by the **Front Panel Firmware Version** status box. This is stored on a programmable IC located on the H093 Front Panel Display PCB.

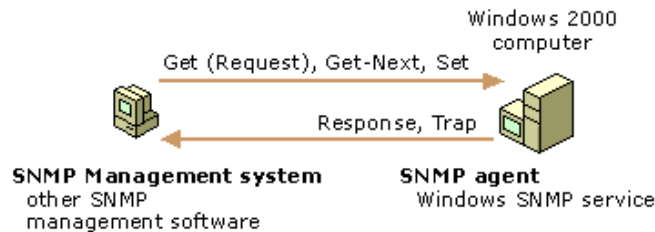
Pixel Power support may request this information when dealing with support issues relating to the system.

19.5 SNMP port configuration

19.5.1 What is SNMP?

Since it was developed in 1988, the Simple Network Management Protocol (SNMP) has become the de facto standard for inter-network management.

F-172 Simple Network Management Protocol (SNMP)



The network management system contains two primary elements: a manager and agents. The manager is the console through which the network administrator performs network management functions. Any computer running SNMP management software is an SNMP management system. The management software application does not need to run on the same host as the SNMP agent. Third-party software can be purchased to provide this management capability. Agents are the entities that interface to the actual device being managed. Bridges, Hubs, Routers or network servers are examples of managed devices that contain managed objects and a Clarity system unit can also be included in this list.

The SNMP management system requests information from a managed computer (agent). Managed objects on an agent can be hardware, configuration parameters, performance statistics, and so on, that directly relate to the current operation of the device in question. These objects are arranged in what is known as a virtual information database, called a management information base or MIB. SNMP allows managers and agents to communicate for the purpose of accessing these objects. In general, agents do not originate messages, but only respond to them. A trap message is the only agent-initiated SNMP communication. A trap is an alarm-triggering event on an agent, such as a system reboot or illegal access, which provides enhanced security.

Third-party software can be purchased to provide this management capability. The functionality provided on the **SNMP** dialog tab only enables a Clarity system unit to act as an agent and to trap alerts from an explicit Hostname or IP address. Customisation of the SMNP services and the ability to turn the services on/off is available via the **Local Preferences** dialog box. To display the **Local Preferences** dialog box, select **Options>Local Preferences**.

19.5.2 Location of the Clarity .MIB file on Clarity system units

Information about Clarity hardware objects needs to be compiled into the main management information base (.MIB) on the manager system. This information is stored in Clarity's own .MIB file on every system unit.

F-173 Clarity .MIB files and locations

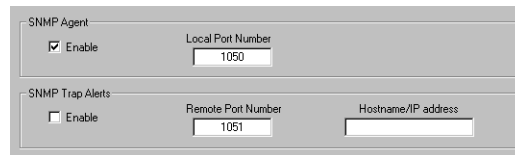
| Clarity System | Filename | Default location |
|----------------|-----------------|--|
| 100 | Clarity100.mib | C:\Program Files\Pixel Power Ltd\CG Tools 7.1\Driver |
| 200 | Clarity200.mib | |
| 300 | Clarity300.mib | |
| 3000 | Clarity3000.mib | |
| 500 | Clarity500.mib | |
| 5000 | Clarity5000.mib | |

19. System Monitoring and Configuration [CLARITY]

19.5.3 SNMP dialog tab

The functionality provided on the **SNMP** dialog tab only enables a Clarity system unit to act as an agent and to trap alerts from an explicit Hostname or IP address.

F-174 Local Preferences dialog box | SNMP dialog tab



| | | |
|--|----------------------------|-------------------------|
| SNMP Agent | | |
| <input checked="" type="checkbox"/> Enable | Local Port Number 1050 | |
| SNMP Trap Alerts | | |
| <input type="checkbox"/> Enable | Remote Port Number 1051 | Hostname/IP address |

19.5.3.1 Enabling Clarity to act as an SNMP agent

To enable Clarity to act as an SNMP agent, follow the steps below:

1. Ensure that the **Enable** box is checked in the **SNMP Agent** group box.
2. Enter the UDP port the agent (system) is communicating on in the **Local Port Number** text box.

19.5.3.2 Enabling Clarity to track alerts relating to a hostname or IP address

To enable Clarity to trap SNMP alerts, follow the steps below:

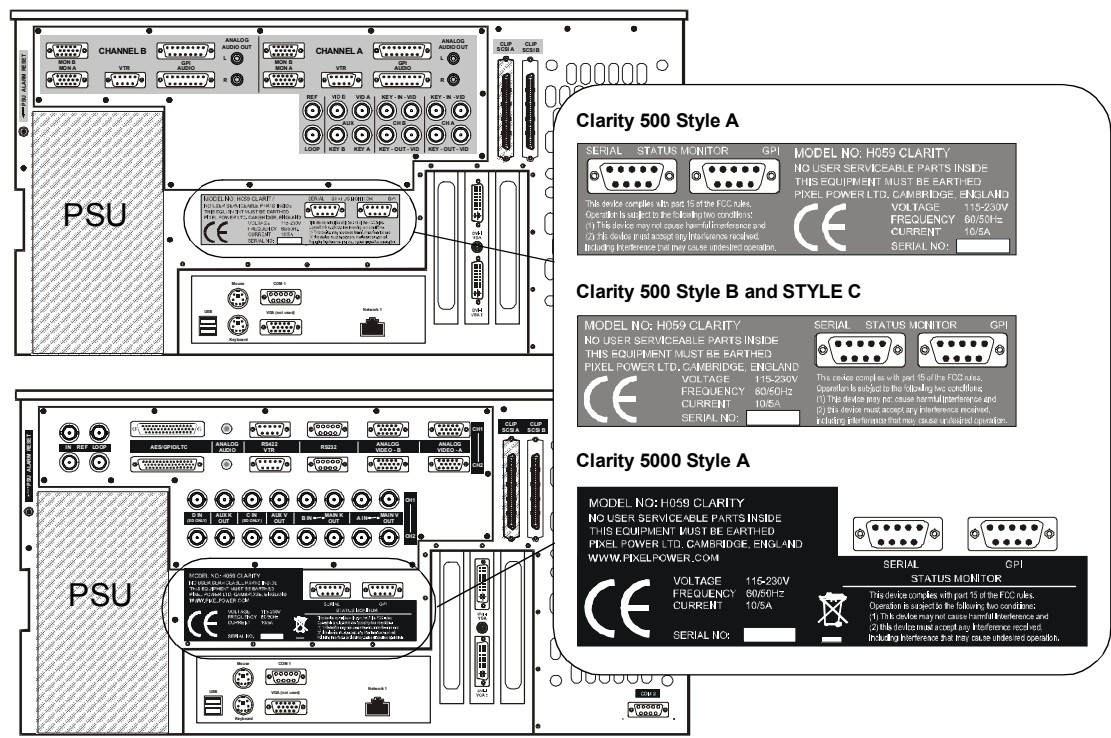
1. Ensure that the **Enable** box is checked in the **SNMP Trap Alerts** group box.
2. Specify the Hostname or IP address of the Clarity system for which you want to trap alerts in the **Hostname/IP Address** text box.
3. Enter the UDP port the agent (system) is communicating on in the **Local Port Number** text box.

19.6 Serial and GPI monitoring

19.6.1 3U and 5U Clarity systems

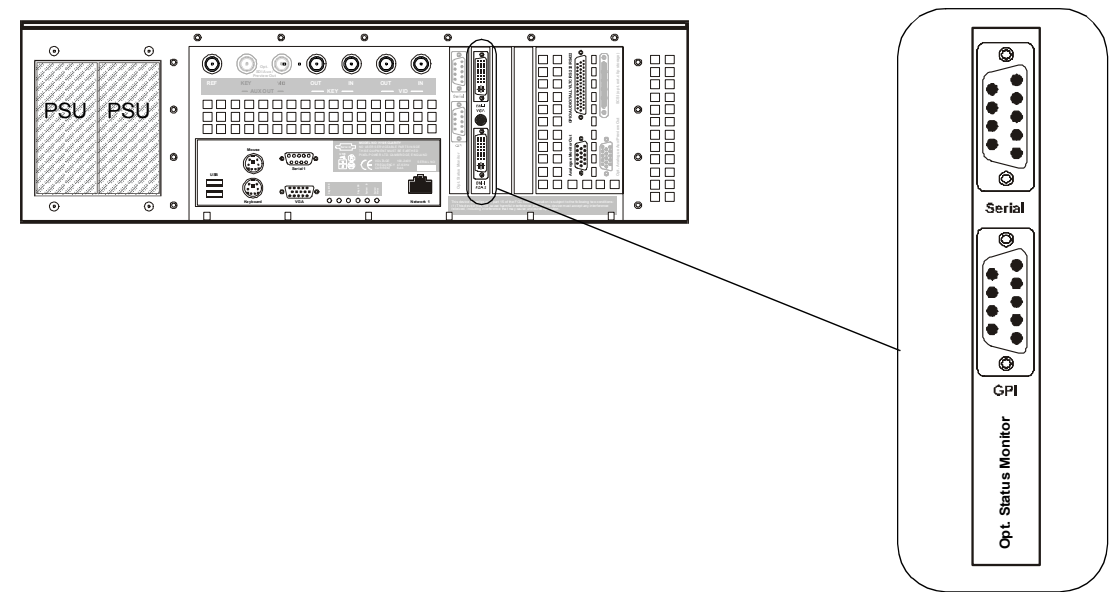
The status monitor SERIAL and GPI 9-pin standard density female D-type connector ports enable local monitoring of rack parameters and alarms.

F-175 Standard 5U Clarity system unit SERIAL and GPI ports



The status monitor SERIAL and GPI 9-pin standard density female D-type connector ports are an option on Clarity 3U systems.

F-176 Optional 3U Clarity system unit SERIAL and GPI ports



19. System Monitoring and Configuration [CLARITY]

19.6.1.1 GPI contact closure alarm monitoring

You can monitor and optionally trigger and cancel remote alarms using contact closure GPI signals sent or received from/to the status monitor **GPI** 9-pin standard density female D-type connector. For Clarity 500 and Clarity 5000 systems, this must be enabled first in the CG Tools software using the controls in the **Fault Condition Actions** group box on the **Rack** dialog tab on the **Local Preferences** dialog box. Refer to “19.4.2.10 Fault Condition Actions group box” on page 19.11 for more information.

For more information on the pinout configurations of this port, refer to “4.13.4.5 9-pin standard density (SD) D-type female connector (GPI Status Monitor)” on page 4.73 for more information.

19.6.1.2 RS232 serial monitoring

Connection of a terminal to the status monitor **SERIAL** 9-pin standard density female D-type connector enables the viewing of various rack parameters. They are listed in the following table.

F-177 Clarity serial monitor commands

| Command | Description |
|---------|----------------------------------|
| PS | Power supply status |
| TEMP | Rack temperature |
| THRESH | Rack temperature alarm threshold |

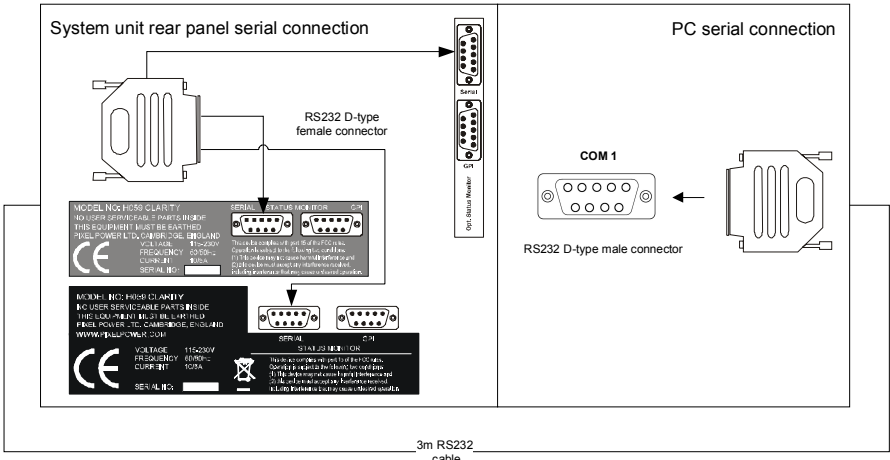
For more information on the pinout configurations of this port, refer to “4.13.4.4 9-pin standard density (SD) D-type female connector (RS232/RS422/Status Monitor)” on page 4.72 for more information.

19.6.1.2.1 Configuring a serial connection

To enable RS232 rack monitoring, the system unit and host PC should be connected using an RS232 serial data cable.

Before connecting a host PC to monitor the serial port, you must ensure that the status monitor **SERIAL** 9-pin standard density female D-type connector is configured to operate in RS232 rather than RS422 mode. Refer to “21.9 Clarity 2 STYLE B and C and Clarity 500 STYLE A, B and C maintenance and upgrades” on page 21.30 for more information.

F-178 Clarity RS232 serial monitor connection schematic



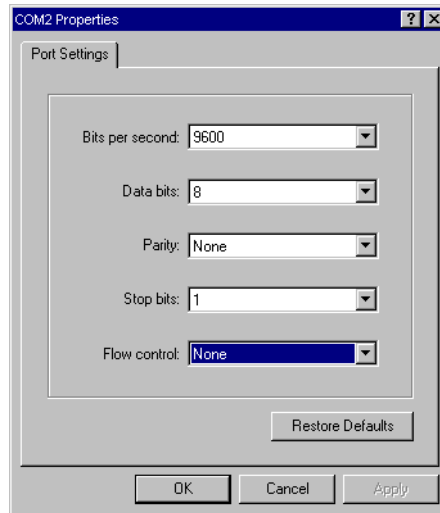
The cable should be connected directly to the system unit status monitor **SERIAL** connector and to an available COM serial communications port on the PC.

19. System Monitoring and Configuration [CLARITY]

With the physical connection made, you must now configure HyperTerminal so that it can communicate with a system unit. Follow the steps below:

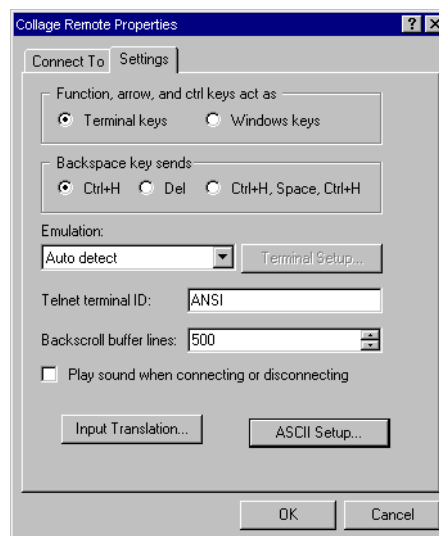
1. On the host PC, select **Start>Programs>Accessories>Communications>HyperTerminal**.
The **HyperTerminal** application window appears and the **New Connection** dialog box appears.
2. Enter a name for the connection using the **Name** text box (e.g. Clarity) and select **OK**. The **Connect To** dialog box appears.
3. Select the port which the host PC will connect with using the **Connect Using** drop-down list box, then select **OK**.

F-179 HyperTerminal | Properties dialog box



4. Configure the port settings as shown, then select **OK**. The **COM Properties** dialog box is closed and you are returned to the main **Hyperterminal** application window.
5. Select **File>Properties** to display the **COM Properties** dialog box again.
6. Select the **Settings** dialog tab.

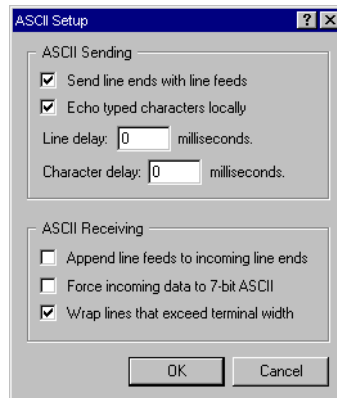
F-180 HyperTerminal | Properties dialog box | Settings dialog tab



7. Configure the port settings as shown above, then select **ASCII Setup**. The **ASCII Setup** dialog box appears.

19. System Monitoring and Configuration [CLARITY]

F-181 HyperTerminal | ASCII Setup dialog box



8. Configure the port settings as shown above, then click on **OK**. You are returned to **COM Properties** dialog box.

9. Select **OK**.

The dialog box is closed and you are returned to the main **Hyperterminal** application window. HyperTerminal should now be ready to communicate with the connected system unit. To initiate communication, press **Enter**. The **Clarity** prompt should appear. You can then enter a desired serial monitoring command.

20. Inside a System Unit**[CLARITY]**

This section details the numerous PCB's that have been used in past production and those that are currently used in the latest Clarity models.

20.1 Major internal PCB variants and usage**20.1.1 Brief major PCB variant description**

The table below identifies each major internal PCB and describes its role within a system unit. Legacy PCB's are shaded.

T-79 Brief major PCB variant description

| Part | Role | Description |
|------|----------------------------|---|
| H059 | SD/HD Framestore CPU | Original Framestore CPU PCB for SD/HD systems. |
| H069 | HD I/O | Single channel HD I/O input/output PCB together with rear panel connectivity. |
| H075 | SD I/O | Dual/Single channel SD I/O input/output PCB with rear panel connectivity. |
| H088 | SD Framestore CPU | SD CPU PCB with clip store connectivity. |
| H089 | SD I/O | SD I/O PCB together with rear panel connectivity including audio. |
| H096 | SD Framestore CPU and I/O | SD CPU PCB and I/O PCB with rear panel connectivity. |
| H098 | SD Clip Processing and I/O | SD clip processing and I/O PCB with clip store connectivity. |
| H100 | SD/HD Framestore CPU & I/O | SD/HD CPU PCB and I/O PCB with rear panel connectivity. |
| H101 | SD/HD Disk Interface | SD/HD disk interface, clip processing and I/O PCB with clip store connectivity. |
| H111 | SD/HD I/O | SD/HD I/O PCB with rear panel connectivity including audio. |
| H112 | SD/HD Framestore CPU | SD/HD CPU PCB |
| H114 | SD/HD Disk Interface | SD/HD disk interface, clip processing and I/O PCB with clip store connectivity. |

20.1.2 Possible PCB utilisation depending on model and channel derivative**20.1.2.1 Clarity****[LEGACY]**

The tables below details the number of each major internal PCB used by each channel derivative. It also shows the resulting rear panel style used to interface with the selected internal PCB architecture.

T-80 Clarity PCB utilisation depending on model and channel derivative

| Channel Derivative | Number of HD channels | Number of SD channels | Rear Panel STYLE A | | |
|---|-----------------------|-----------------------|--------------------|------|------|
| | | | H059 | H069 | H075 |
| Single Channel HD | 1 | 0 | 1 | 1 | |
| Dual Channel HD | 2 | 0 | 2 | 2 | |
| Dual Channel SD (H059 based) | 0 | 2 | 1 | | 1 |
| Switchable Single Channel HD OR Dual Channel SD | 1 | 2 | 1 | 1 | 1 |
| Dual Channel SD and Single Channel HD | 1 | 2 | 2 | 1 | 1 |

20. Inside a System Unit [CLARITY]

20.1.2.2 Clarity 2

[LEGACY]

The tables below details the number of each major internal PCB used by each channel derivative. It also shows the resulting rear panel style used to interface with the selected internal PCB architecture.

T-81 Clarity 2 PCB utilisation depending on model and channel derivative

| Channel Derivative | Number of HD channels | Number of SD channels | Rear Panel STYLE A | | | Rear Panel STYLE B | | | Rear Panel STYLE C | | | Rear Panel STYLE D | | |
|---|-----------------------|-----------------------|--------------------|------|------|--------------------|------|------|--------------------|------|------|--------------------|------|------|
| | | | H075 | H088 | H089 | H075 | H088 | H089 | H075 | H088 | H089 | H059 | H069 | H075 |
| Dual Channel SD with video clips | 0 | 2 | 1 | 1 | | | | | | | | | | |
| Dual Channel SD with video and audio clips | 0 | 2 | | | | | 1 | 1 | | 1 | 1 | | | |
| Dual Channel HD | 2 | 0 | | | | | | | | | | 2 | 2 | |
| Switchable Single Channel HD OR Dual Channel SD | 1 | 2 | | | | | | | | | | 1 | 1 | 1 |
| Dual Channel SD and Single Channel HD | 1 | 2 | | | | | | | | | | 2 | 1 | 1 |

20.1.2.3 Clarity 100, 200 and 300

The tables below details the number of each major internal PCB used by each channel derivative. It also shows the resulting rear panel style used to interface with the selected internal PCB architecture.

T-82 Clarity 100, 200 and 300 PCB utilisation depending on model and channel derivative

| Model | Channel Derivative | Number of HD channels | Number of SD channels | Rear Panel STYLE A | |
|-------------|---|-----------------------|-----------------------|--------------------|------|
| | | | | H096 | H098 |
| Clarity 100 | Single Channel SD (may include optional audio) | 0 | 1 | 1 | |
| Clarity 200 | Single Channel SD (may include optional audio) | 0 | 1 | 1 | |
| | Single Channel SD with video clips (may include optional audio) | 0 | 1 | 1 | 1 |
| Clarity 300 | Single Channel SD (may include optional audio) | 0 | 1 | 1 | |
| | Single Channel SD with video clips (may include optional audio) | 0 | 1 | 1 | 1 |

20.1.2.4 Clarity 3000

The tables below details the number of each major internal PCB used by each channel derivative. It also shows the resulting rear panel style used to interface with the selected internal PCB architecture.

T-83 Clarity 3000 PCB utilisation depending on model and channel derivative

| Channel Derivative | Number of HD channels | Number of SD channels | Rear Panel STYLE A | | |
|--|-----------------------|-----------------------|--------------------|------|------|
| | | | H111 | H112 | H113 |
| Single Channel switchable HD/SD | 1 | 1 | 1 | 1 | |
| Single Channel switchable HD/SD with video clips | 1 | 1 | 1 | 1 | 1 |

| Channel Derivative | Number of HD channels | Number of SD channels | Rear Panel STYLE A | | |
|--|-----------------------|-----------------------|--------------------|------|------|
| | | | H111 | H112 | H113 |
| Single Channel switchable HD/SD with video and audio clips | 1 | 1 | 1 | 1 | 1 |

20.1.2.5 Clarity 500

The tables below details the number of each major internal PCB used by each channel derivative. It also shows the resulting rear panel style used to interface with the selected internal PCB architecture.

T-84 Clarity 500 PCB utilisation depending on model and channel derivative

| Channel Derivative | Number of HD channels | Number of SD channels | Rear Panel STYLE A | | Rear Panel STYLE B | | Rear Panel STYLE C | |
|--|-----------------------|-----------------------|--------------------|------|--------------------|------|--------------------|------|
| | | | H088 | H089 | H088 | H089 | H088 | H089 |
| Dual Channel SD with video clips | 0 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| Dual Channel SD with video and audio clips | 0 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |

20.1.2.6 Clarity 5000

The tables below details the number of each major internal PCB used by each channel derivative. It also shows the resulting rear panel style used to interface with the selected internal PCB architecture.

T-85 Clarity 5000 PCB utilisation depending on model and channel derivative

| Channel Derivative | Number of HD channels | Number of SD channels | Rear Panel STYLE A | |
|---|-----------------------|-----------------------|--------------------|------|
| | | | H100 | H101 |
| Single Channel switchable HD/SD | 1 | 1 | 1 | |
| Single Channel switchable HD/SD with video clips | 1 | 1 | 1 | 1 |
| Single Channel HD/SD with video and audio clips | 1 | 1 | 1 | 1 |
| Dual Channel HD/SD or simultaneous HD and SD | 2 | 2 | 2 | |
| Dual Channel HD/SD or simultaneous HD and SD with video clips | 2 | 2 | 2 | 1 |
| Dual Channel HD/SD or simultaneous HD and SD with video and audio clips | 2 | 2 | 2 | 1 |

20. Inside a System Unit [CLARITY]


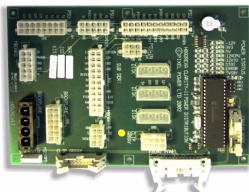
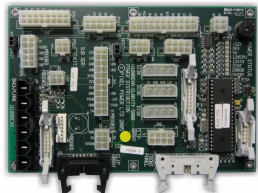
20.2 Description of PCB's

The sections below detail the full complement of PCB's that have been used since product development began and also give a description of their use.

20.2.1 Power distribution (H072, H092 and H108)

The table below identifies power related PCB's and describes their role within a system unit.

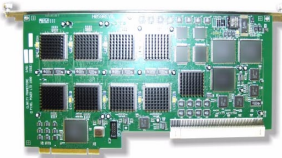

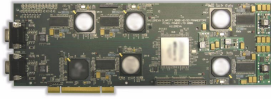
T-86 Power distribution PCB table

| Part | Role | Image (not to scale) | Description |
|------|--|--|--|
| H072 | System wide power distribution facility for: Clarity STYLE A Clarity 2 STYLE B |  | Distributes power from the internal power supply to all internal PCB's, drives and cooling fans. Refer to “20.8 H072 Power Distribution” on page 20.22 for more information. |
| H092 | System wide power distribution facility for: Clarity 2 STYLE C Clarity 2 STYLE D Clarity 500 STYLE A/B/C |  | Distributes power from the internal power supply to all internal PCB's, drives and cooling fans. Refer to “20.16 H092 Power Distribution” on page 20.30 for more information. |
| H108 | System wide power distribution facility for: Clarity 5000 STYLE A |  | Distributes power from the internal power supply to all internal PCB's, drives and cooling fans. Refer to “20.29 H108 Power Distribution” on page 20.43 for more information. |

20.2.2 Framestore CPU (H059, H088 and H112)

The table below identifies Framestore CPU related PCB's and describes their role within a system unit.



T-87 Framestore CPU PCB table

| Part | Role | Image (not to scale) | Description |
|------|---|---|---|
| H059 | Standard Definition/High Definition (SD/HD) Framestore CPU facility for: Clarity STYLE A Clarity 2 STYLE D |  | Manages and temporarily stores video frames for distribution between I/O PCB's and the motherboard. Refer to “20.4 H059 Standard Definition (SD) and High Definition (HD) Framestore CPU” on page 20.18 for more information. |
| H088 | Standard Definition (SD) Framestore CPU facility for: Clarity 2 STYLE B Clarity 2 STYLE C Clarity 500 STYLE A/B/C |  | Manages and temporarily stores video frames for distribution between I/O PCB's and the motherboard. Refer to “20.13 H088 Standard Definition (SD) Framestore CPU” on page 20.27 for more information. |
| H112 | Standard Definition/High Definition (SD/HD) Framestore CPU facility for: Clarity 3000 STYLE A |  | Manages and temporarily stores video frames for distribution between I/O PCB's and the motherboard. Refer to “20.31 H112 Standard Definition (SD) and High Definition (HD) Framestore CPU” on page 20.45 for more information. |

20.2.3 Framestore CPU and Input/Output (I/O) (H096 and H100)

The table below identifies Framestore CPU and Input/Output related PCB's and describes their role within a system unit.


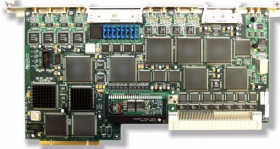


T-88 Framestore CPU and I/O PCB table

| Part | Role | Image (not to scale) | Description |
|-------------|--|---|--|
| H096 | Standard Definition (SD) Framestore CPU and Input/Output + Audio facility for: Clarity 100 STYLE A Clarity 200 STYLE A Clarity 300 STYLE A |  | Manages and temporarily stores video frames for distribution between I/O PCB's and the motherboard. Also provides facility for transmitting/receiving/managing audio signals if required. Refer to “20.20 H096 Standard Definition (SD) Framestore CPU and Input/Output (I/O) + Audio” on page 20.34 for more information. |
| H100 | Standard Definition/High Definition (SD/HD) Framestore CPU and Input/Output + Audio facility for: Clarity 5000 STYLE A |  | Manages and temporarily stores video frames for distribution between I/O PCB's and the motherboard. Also provides facility for transmitting/receiving/managing audio signals if required. Refer to “20.23 H100 Standard Definition/High Definition (SD/HD) Framestore CPU and Input/Output + Audio” on page 20.37 for more information. |

20.2.4 Input/Output (I/O) (H069, H075, H089 and H111)

The table below identifies Input/Output (I/O) related PCB's and describes their role within a system unit.

T-89 I/O PCB table

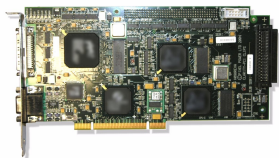
| Part | Role | Image (not to scale) | Description |
|-------------|--|---|--|
| H069 | High Definition (HD) I/O facility for: Clarity STYLE A Clarity 2 STYLE D |  | Transmits, receives and manages digital video signals between the H059 Framestore CPU PCB and H070/H094 Video Backplane PCB. Refer to “20.5 H069 High Definition (HD) Input/Output (I/O)” on page 20.19 for more information. |
| H075 | Standard Definition (SD) I/O facility for: Clarity STYLE A Clarity 2 STYLE D |  | Transmits, receives and manages digital video signals between the framestore and video backplane PCB's. Refer to “20.10 H075 Standard Definition (SD) Input/Output (I/O)” on page 20.24 for more information. |
| H089 | Standard Definition (SD) I/O + Audio facility for: Clarity 2 STYLE B Clarity 2 STYLE C Clarity 500 STYLE A/B/C |  | Transmits, receives and manages digital video signals between the framestore and video backplane PCB's. Also provides facility for transmitting/receiving/managing audio signals if required. Refer to “20.14 H089 Standard Definition (SD) Input/Output (I/O) + Audio” on page 20.28 for more information. |
| H111 | Standard Definition/High Definition (SD/HD) I/O + Audio facility for: Clarity 3000 STYLE A |  | Transmits, receives and manages digital video signals between the H112 Framestore CPU PCB and the motherboard. Refer to “20.30 H111 Standard Definition (SD) and High Definition (HD) Input/Output (I/O) + Audio” on page 20.44 for more information. |

20. Inside a System Unit [CLARITY]

20.2.5 Standard Definition (SD) Clip Processing and Input/Output (I/O) (H098)

The table below identifies clip processing related PCB's and describes their role within a system unit.

T-90 SD Clip Processing and I/O PCB table

| Part | Role | Image (not to scale) | Description |
|------|--|---|---|
| H098 | Standard Definition (SD) Clip processing and I/O facility for: Clarity 100 STYLE A Clarity 200 STYLE A Clarity 300 STYLE A |  | Transmits, receives and manages digital video signals between the clip storage system and the H096 Standard Definition (SD) Framestore CPU and Input/Output (I/O) + Audio PCB. Refer to “20.22 H098 Standard Definition (SD) Clip Processing and Input/Output (I/O)” on page 20.36 for more information. |

20.2.6 Disk Interface (H101 and H114)

The table below identifies disk interface related PCB's and describes their role within a system unit.


T-91 Disk Interface PCB table

| Part | Role | Image (not to scale) | Description |
|------|---|---------------------------------|---|
| H113 | Standard Definition/High Definition (SD/HD) disk interface facility for: Clarity 3000 STYLE A | Illustration not yet available. | Transmits, receives and manages digital video signals between the clip storage system and the H112 Framestore CPU PCB. Refer to “20.32 H113 Disk Interface” on page 20.46 for more information. |
| H101 | Standard Definition/High Definition (SD/HD) disk interface facility for: Clarity 5000 STYLE A | Illustration not yet available. | Transmits, receives and manages digital video signals between the clip storage system and the H100 Framestore CPU and Input/Output (I/O) PCB. Refer to “20.24 H101 Disk Interface” on page 20.38 for more information. |

20.2.7 Internal Clip Storage SCSI Backplane (H095)

The table below identifies SCSI storage related PCB's and describes their role within a system unit.

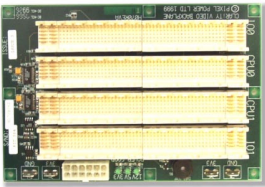
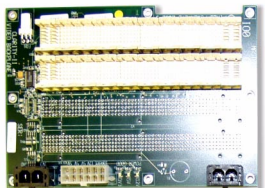
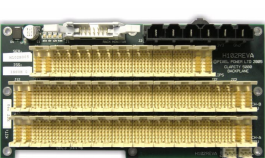
T-92 Internal Clip Storage SCSI/SATA System Backplane PCB table

| Part | Role | Image (not to scale) | Description |
|------|---|---|--|
| H095 | SCSI backplane for the optional 4 x internal SCSI hard disk drives that make up the internal clip storage solution facility for: Clarity 2 STYLE C Clarity 500 STYLE A/B/C Clarity 5000 STYLE A |  | Enables the system to access video and audio clips split over the optional 4 x internal SCSI hard disk drives (RAID 0 configuration), via the system SCSI interface. Refer to “20.19 H095 Internal Clip Storage SCSI Backplane” on page 20.33 for more information. |

20.2.8 Signal Distribution (Video Backplane PCB) (H070, H094 and H102)

The table below identifies signal distribution related PCB's and describes their role within a system unit.

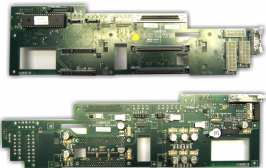
T-93 Signal Distribution PCB table

| Part | Role | Image (not to scale) | Description |
|-------------|---|--|---|
| H070 | Video backplane facility for: Clarity STYLE A Clarity 2 STYLE B |  | Transmits, receives and manages digital video signals between the H059 CPU, H069 HD I/O, H075 SD I/O, H088 SD CPU and H089 SD I/O and the motherboard PCB. Refer to “20.6 H070 Video Backplane” on page 20.20 for more information. |
| H094 | Video backplane facility for: Clarity 2 STYLE C Clarity 2 STYLE D Clarity 500 STYLE A/B/C |  | Transmits, receives and manages digital video signals between the H059 CPU, H069 HD I/O, H075 SD I/O, H088 SD CPU and H089 SD I/O and the motherboard PCB. Refer to “20.18 H094 Video Backplane” on page 20.32 for more information. |
| H102 | Video backplane facility for: Clarity 5000 STYLE A |  | Transmits, receives and manages digital video signals between the H100 SD/HD CPU I/O, H101 Disk Interface and the motherboard PCB. Refer to “20.25 H102 Video Backplane” on page 20.39 for more information. |

20.2.9 SCSI/SATA/Power System Backplane (H106)

The table below identifies SCSI/SATA/Power storage related PCB's and describes their role within a system unit.

T-94 SCSI/SATA/Power System Backplane PCB table

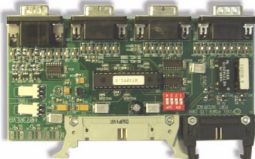
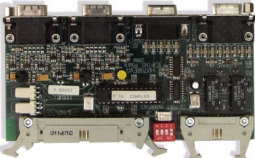
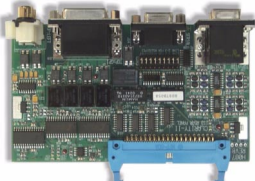
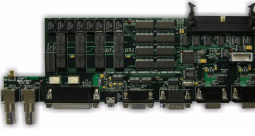
| Part | Role | Image (not to scale) | Description |
|-------------|---|---|---|
| H106 | Power, SCSI and SATA backplane for the 2 x internal SATA system hard disk drives and the optional 2 x internal SCSI hard disk drives that make up the internal clip storage solution facility for: Clarity 300 STYLE A Clarity 3000 STYLE A |  | Supplies power to internal system components and enables the system to access the 2 x internal SATA system hard disk drives (RAID 1 configuration). Also enables the system to access video and audio clips split over the optional 2 x internal SCSI hard disk drives (RAID 0 configuration), via the system SCSI interface. Refer to “20.28 H106 SCSI/SATA/Power System Backplane” on page 20.42 for more information. |

20. Inside a System Unit [CLARITY]

20.2.10 Rear Panel Connectivity (Rear Panel PCB) (H073, H079, H087 and H104)

The table below identifies rear panel connectivity related PCB's and describes their role within a system unit.


T-95 Rear Panel Connectivity PCB table

| Part | Role | Image (not to scale) | Description |
|-------------|---|---|--|
| H073 | High Definition (HD) rear panel facility for: Clarity STYLE A Clarity 2 STYLE D |  | Transmits, receives and manages digital video signals between the framestore and video backplane PCB's. Refer to “20.9 H073 High Definition (HD) Rear Panel” on page 20.23 for more information. |
| H079 | Standard Definition (SD) rear panel facility for: Clarity STYLE A Clarity 2 STYLE D |  | Transmits, receives and manages digital video signals between the framestore and video backplane PCB's. Refer to “20.11 H079 Standard Definition (SD) Rear Panel” on page 20.25 for more information. |
| H087 | Standard Definition (SD) rear panel facility for: Clarity 2 STYLE B Clarity 2 STYLE C Clarity 500 STYLE A/B/C |  | Transmits, receives and manages digital video signals between the framestore and video backplane PCB's. Also provides facility for transmitting/receiving/managing audio signals if required. Refer to “20.12 H087 Standard Definition (SD) Rear Panel + Audio” on page 20.26 for more information. |
| H104 | Standard Definition/High Definition (SD/HD) rear panel facility for: Clarity 5000 STYLE A |  | Transmits, receives and manages digital video signals between the framestore and video backplane PCB's. Also provides facility for transmitting GPI/O, digital audio, bypass tally and LTC signals if required. Refer to “20.26 H104 Standard Definition/High Definition (SD/HD) Rear Panel” on page 20.40 for more information. |

20.2.11 Serial/GPI/GPO Status Monitor (H097)

The table below identifies status monitoring related PCB's and describes their role within a system unit.

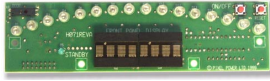
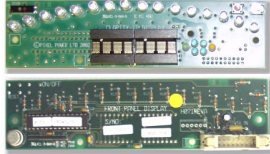
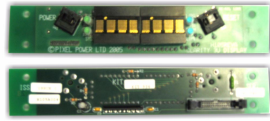
T-96 Status Monitor PCB table

| Part | Role | Image (not to scale) | Description |
|-------------|---|---|---|
| H097 | RS232 and GPI port monitoring facility for: Clarity 2 STYLE C Clarity 2 STYLE D Clarity 300 STYLE A Clarity 3000 STYLE A Clarity 500 STYLE A/B/C Clarity 5000 STYLE A |  | Provides status monitor capabilities via serial RS232 and GPI/GPO. Refer to “20.21 H097 Serial/GPI/GPO Status Monitor” on page 20.35 for more information. |

20.2.12 Front Panel Display (H071, H093 and H105)

The table below identifies front panel PCB's and describes their role within a system unit.


T-97 Front Panel Display PCB table

| Part | Role | Image (not to scale) | Description |
|-------------|--|---|--|
| H071 | Front panel display facility for: Clarity STYLE A Clarity 2 STYLE B |  | Displays system status via LED's and an 8 character dot matrix display. Refer to “20.7 H071 Front Panel Display” on page 20.21 for more information. |
| H093 | Front panel display facility for: Clarity 2 STYLE C Clarity 2 STYLE D Clarity 500 STYLE A/B/C Clarity 5000 STYLE A |  | Displays system status via LED's and an 8 character dot matrix display. Features additional LED's for internal clip storage and redundant power supply status. Refer to “20.17 H093 Front Panel Display” on page 20.31 for more information. |
| H105 | Front panel display facility for: Clarity 300 STYLE A Clarity 3000 STYLE A |  | Displays system status via LED's and an 8 character dot matrix display. Features additional LED's for internal clip storage and SATA system disk monitoring. Refer to “20.27 H105 Front Panel Display” on page 20.41 for more information. |

20.2.13 LTC/VITC Timecode Reader (H091)

The table below identifies timecode related PCB's and describes their role within a system unit.

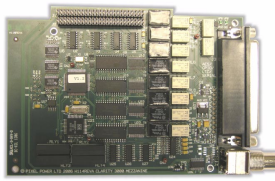
T-98 LTC/VITC Timecode Reader PCB table

| Part | Role | Image (not to scale) | Description |
|-------------|--|---|---|
| H091 | LTC/VITC timecode reader facility for: Clarity 2 STYLE B Clarity 2 STYLE C Clarity 500 STYLE A/B/C |  | Enables the system to read LTC and VITC timecode from audio and video streams. Installed on the H089 SD CPU I/O + Audio PCB. Refer to “20.15 H091 LTC/VITC Timecode Reader” on page 20.29 for more information. |

20.2.14 Interface Mezzanine (H114)

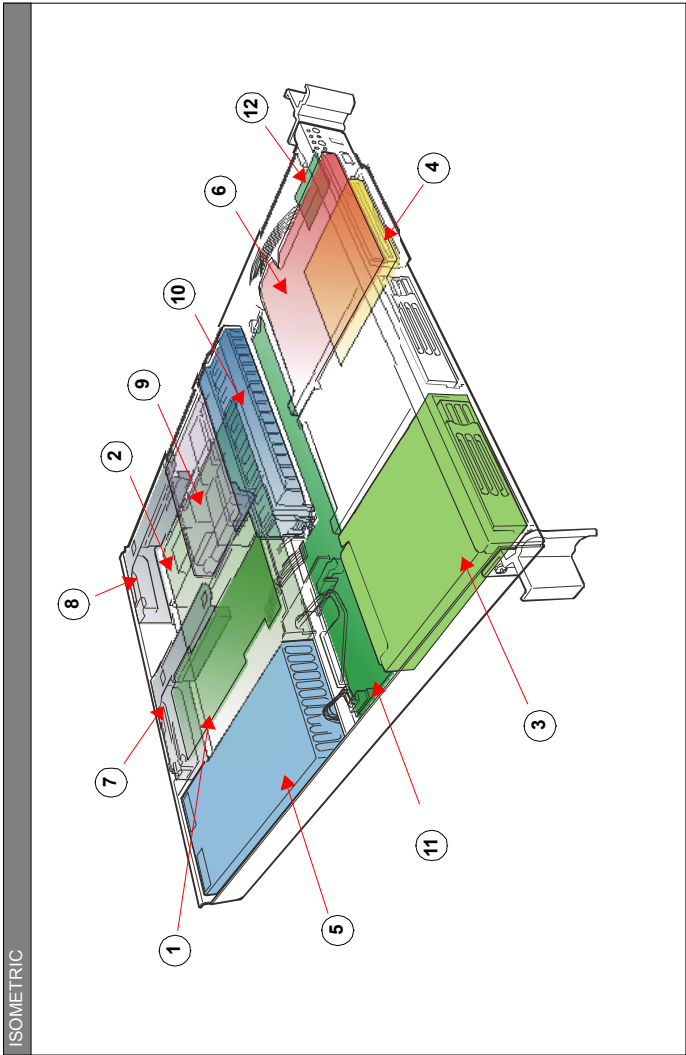
The table below identifies interface related PCB's and describes their role within a system unit.

T-99 Interface Mezzanine PCB table

| Part | Role | Image (not to scale) | Description |
|-------------|--|---|--|
| H114 | Connector interface facility for: Clarity 3000 STYLE A |  | Enables additional rear panel connectivity. Installed on the H111 I/O PCB. Refer to “20.33 H114 Interface Mezzanine” on page 20.47 for more information. |

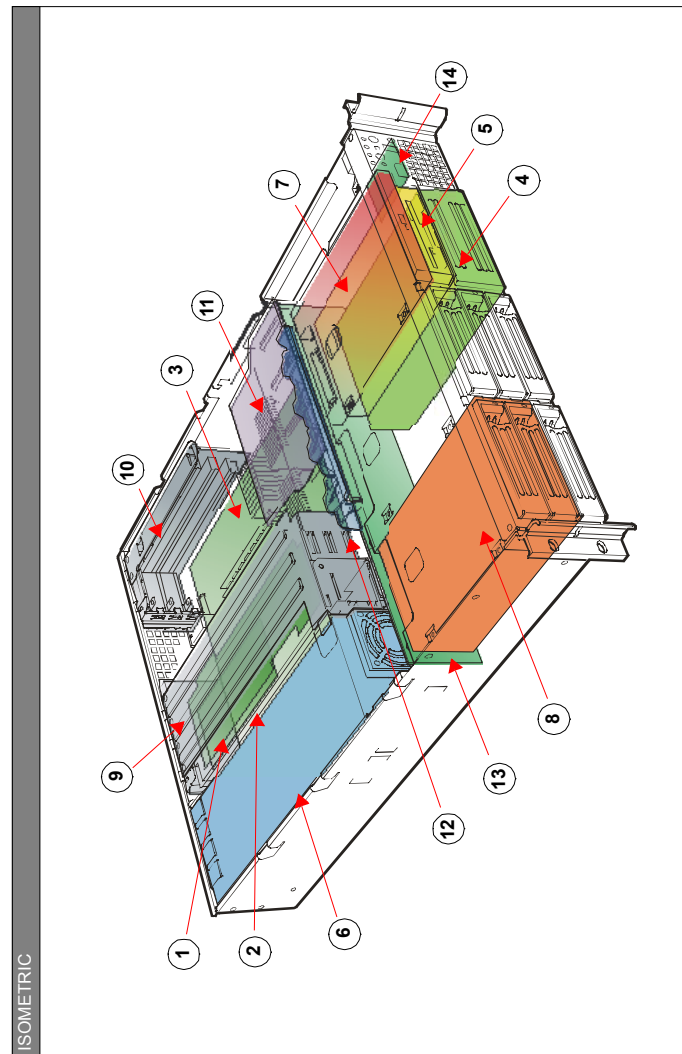
20.3 PCB, disk drive and power supply locations

20.3.1 Clarity 100 STYLE A



| Part | Description | PCB Ref |
|------|--|---------|
| 1 | SD Framestore CPU and I/O PCB | H096 |
| 2 | Motherboard | |
| 3 | IDE hard drive | |
| 4 | Floppy drive | |
| 5 | Power Supply | |
| 6 | CD/CD-RW/DVD Drive | |
| 7 | PCI riser bracket and assembly (full length) | |
| 8 | PCI riser bracket and assembly (low profile) | |
| 9 | Processor air ducting | |
| 10 | Cooling fan assembly | |
| 11 | Backplane PCB | |
| 12 | Front panel PCB | |

20.3.2 Clarity 200 STYLE A (with clips/internal storage)



| Part | Description | PCB Ref |
|------|--|---------|
| 1 | SD Framestore CPU and I/O + Audio PCB | H096 |
| 2 | SD Clip Processing and I/O PCB (OPTIONAL) | H098 |
| 3 | Motherboard | |
| 4 | IDE hard drive | |
| 5 | Floppy drive | |
| 6 | Power Supply | |
| 7 | CD/CD-RW/DVD Drive | |
| 8 | Clip Storage SCSI RAID 0 array (x2 disks) (OPTIONAL) | |
| 9 | PCI riser bracket and assembly (full length) | |
| 10 | PCI riser bracket and assembly (low profile) | |
| 11 | Processor air ducting | |
| 12 | Cooling fan assembly | |
| 13 | Backplane PCB | |
| 14 | Front panel PCB | |

20.3.3 Clarity 300 STYLE A (with clips/internal storage)

TOP

REAR

FRONT

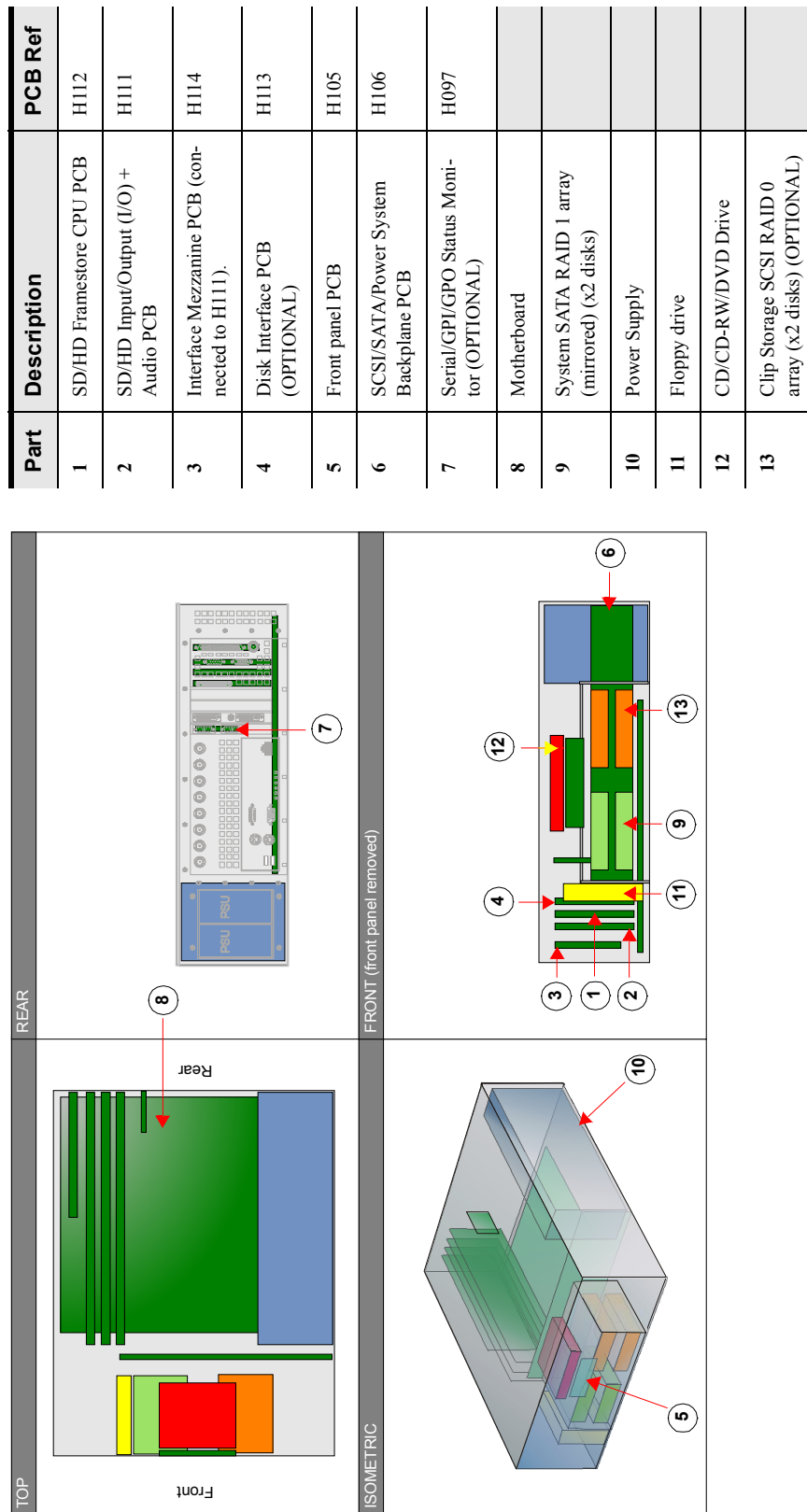
REAR

ISOMETRIC

FRONT (front panel removed)

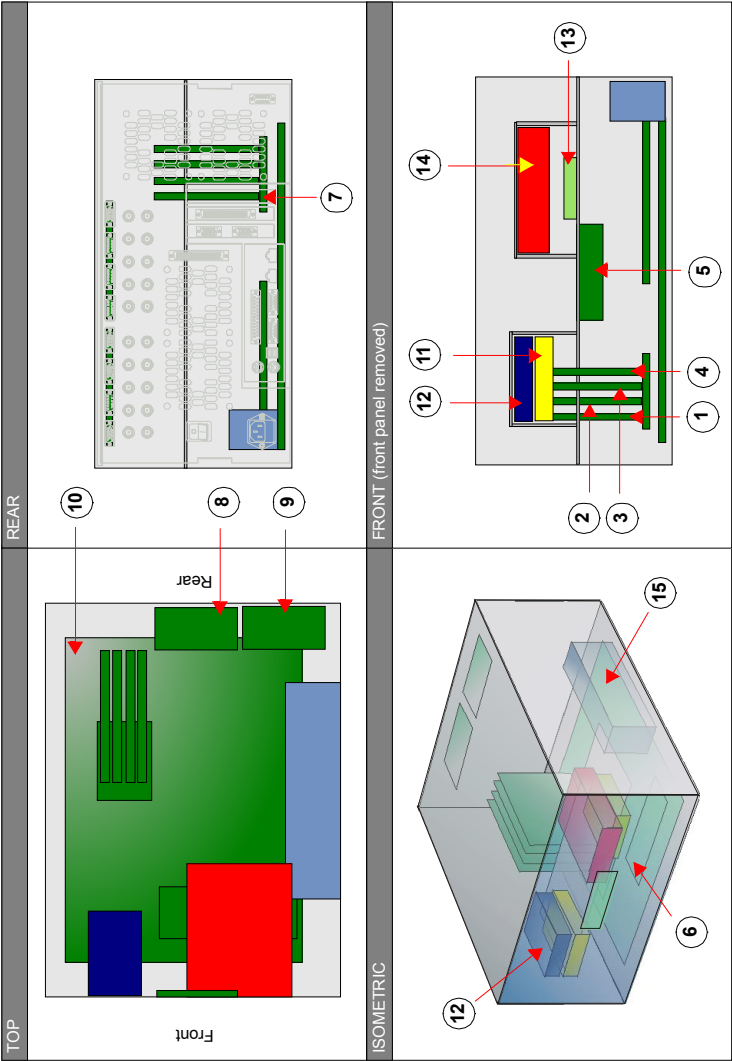
| Part | Description | PCB Ref |
|------|--|---------|
| 1 | SD Framestore CPU and I/O + Audio PCB | H096 |
| 2 | SD Clip Processing and I/O PCB (OPTIONAL) | H098 |
| 3 | Front panel PCB | H105 |
| 4 | SCSI/SATA/Power System Backplane PCB | H106 |
| 5 | Serial/GPI/GPO Status Monitor (OPTIONAL) | H097 |
| 6 | Motherboard | |
| 7 | System SATA RAID 1 array (mirrored) (x2 disks) | |
| 8 | Power Supply | |
| 9 | Floppy drive | |
| 10 | CD/CD-RW/DVD Drive | |
| 11 | Clip Storage SCSI RAID 0 array (x2 disks) (OPTIONAL) | |

20.3.4 Clarity 3000 STYLE A (clips/internal storage)



20.3.5 Clarity STYLE A

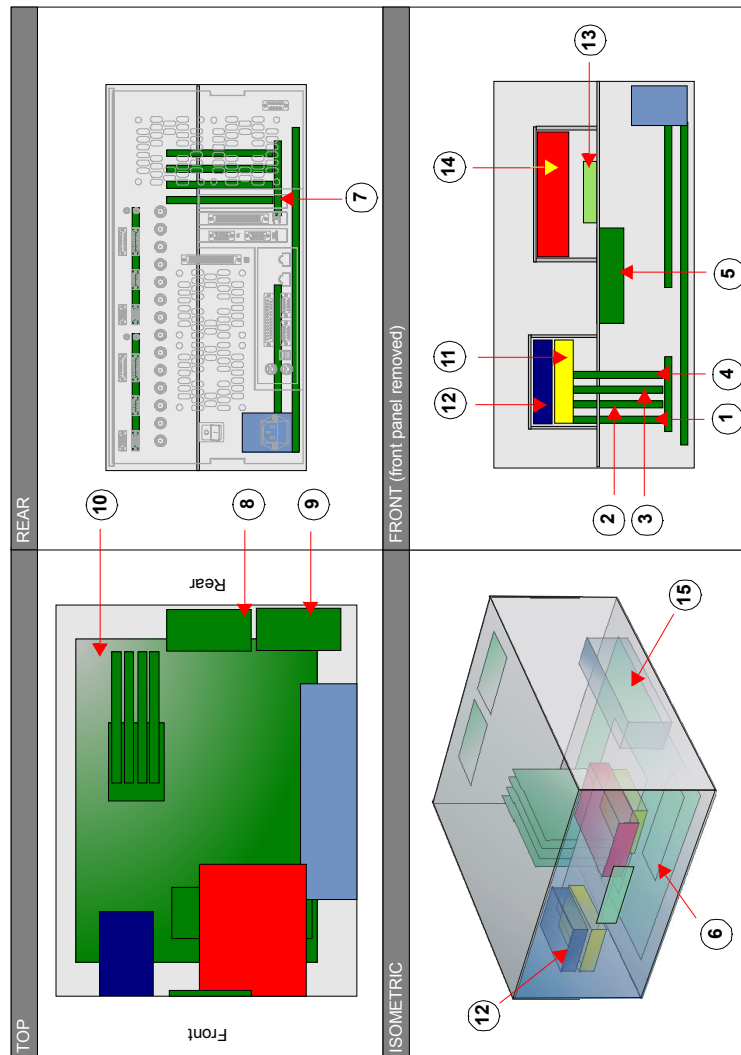
[LEGACY]



| Part | Description | PCB Ref |
|------|---|--------------------|
| 1 | SD or HD I/O PCB in H070 Video Backplane slot IO1 | H069, H075 H088 |
| 2 | SD/HD Framestore CPU PCB in H070 Video Backplane slot CPU1 | H059 |
| 3 | SD/HD Framestore CPU PCB in H070 Video Backplane slot CPU0 | H059 |
| 4 | SD or HD I/O PCB in H070 Video Backplane slot IO0 | H069, H075 H088 |
| 5 | Front Panel display PCB | H071 |
| 6 | Power Distribution PCB | H072 |
| 7 | Video Backplane PCB | H070 |
| 8 | Rear Panel PCB (HD or SD) | H073, H079 |
| 9 | Rear Panel PCB (HD or SD) | H073, H079 |
| 10 | Motherboard | |
| 11 | Floppy drive | |
| 12 | ZIP drive | |
| 13 | SCSI hard drive | |
| 14 | CD/CD-RW/DVD Drive | |
| 15 | Power Supply | |

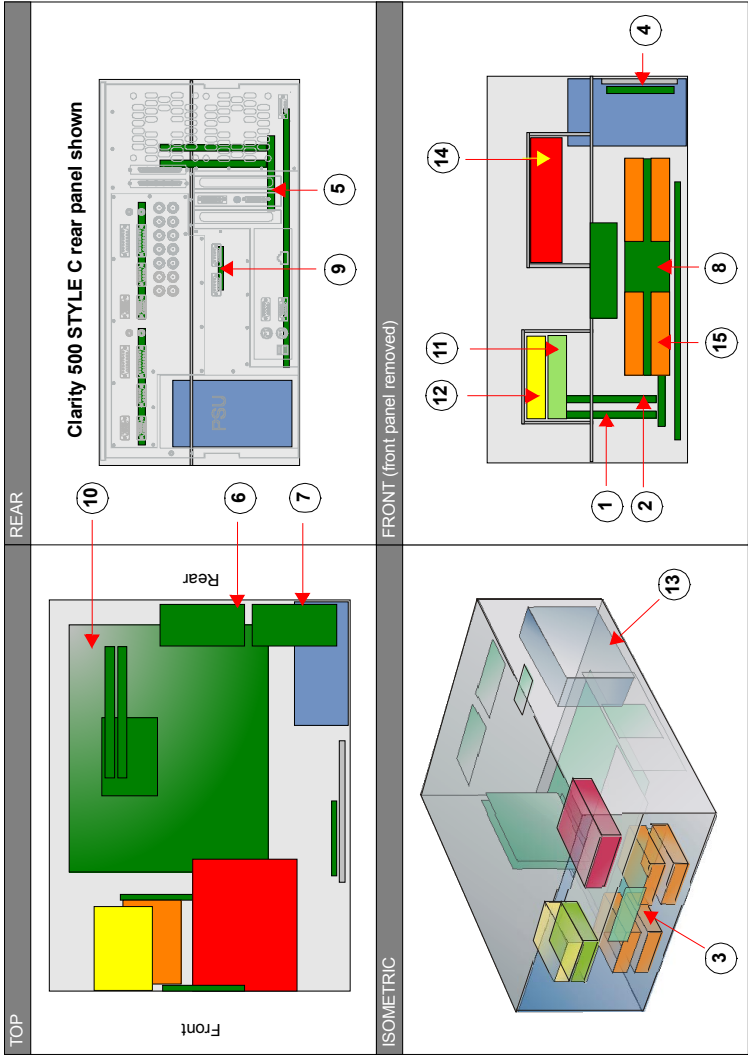
20.3.6 Clarity 2 STYLE B

[LEGACY]



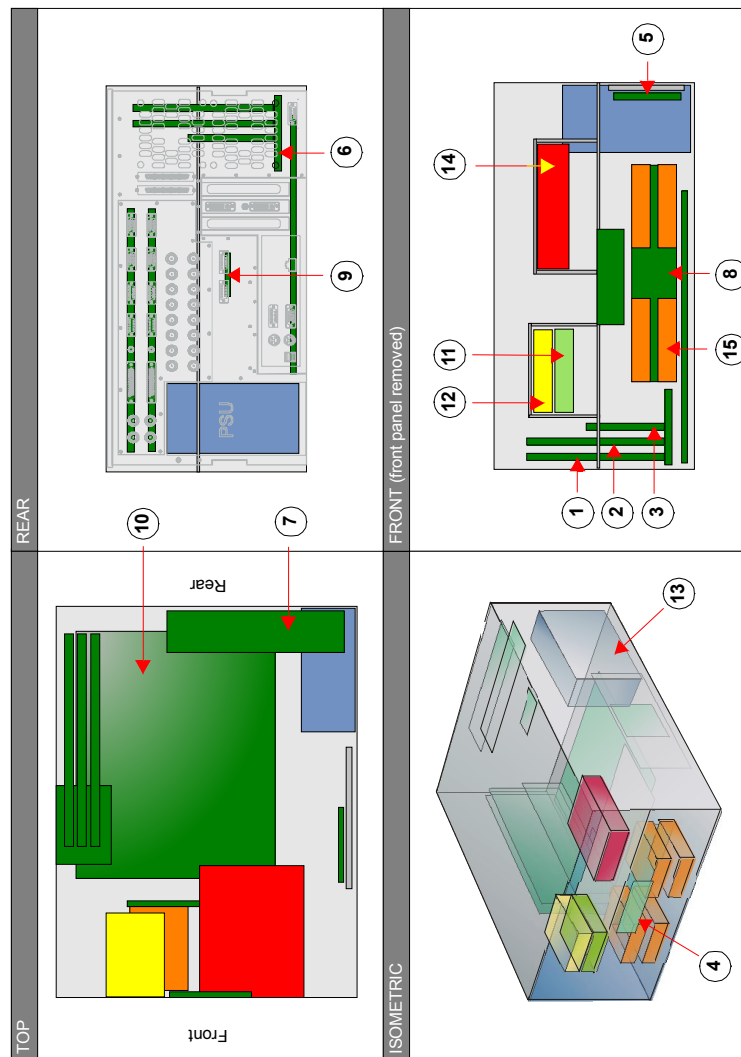
| Part | Description | PCB Ref |
|------|--|--------------------|
| 1 | SD or HD I/O PCB in H070 Video Backplane Slot IO1 | H069, H075 H088 |
| 2 | SD Framestore CPU PCB in H070 Video Backplane Slot CPU1 | H059 |
| 3 | SD Framestore CPU PCB in H070 Video Backplane Slot CPU0 | H059 |
| 4 | SD or HD I/O PCB in H070 Video Backplane Slot IO0 | H069, H075 H088 |
| 5 | Front Panel display PCB | H071 |
| 6 | Power Distribution PCB | H072 |
| 7 | Video Backplane PCB | H070 |
| 8 | Rear Panel PCB (SD) | H087 |
| 9 | Rear Panel PCB (SD) | H087 |
| 10 | Motherboard | |
| 11 | Floppy drive | |
| 12 | ZIP drive | |
| 13 | SCSI hard drive | |
| 14 | CD/CD-RW/DVD Drive | |
| 15 | Power Supply | |

20.3.7 Clarity 2 STYLE C, Clarity 500 STYLE A, B and C (dual channel with clips/internal storage)



| Part | Description | PCB Ref |
|------|--|---------|
| 1 | SD I/O PCB in H094 Video Backplane slot IO0 | H089 |
| 2 | SD Framestore CPU PCB in H094 Video Backplane slot CPU0 | H088 |
| 3 | Front Panel display PCB | H093 |
| 4 | Power Distribution PCB | H092 |
| 5 | Video Backplane PCB | H094 |
| 6 | Rear Panel PCB (SD) | H087 |
| 7 | Rear Panel PCB (SD) | H087 |
| 8 | Internal Clip Storage SCSI Backplane (OPTIONAL) | H095 |
| 9 | Serial/GPI/GPO Status Monitor (OPTIONAL) | H097 |
| 10 | Motherboard | |
| 11 | SATA/IDE hard drive | |
| 12 | Floppy drive | |
| 13 | Power Supply | |
| 14 | CD/CD-RW/DVD-RW Drive | |
| 15 | Clip Storage SCSI RAID 0 array (x4 disks) (OPTIONAL) | |

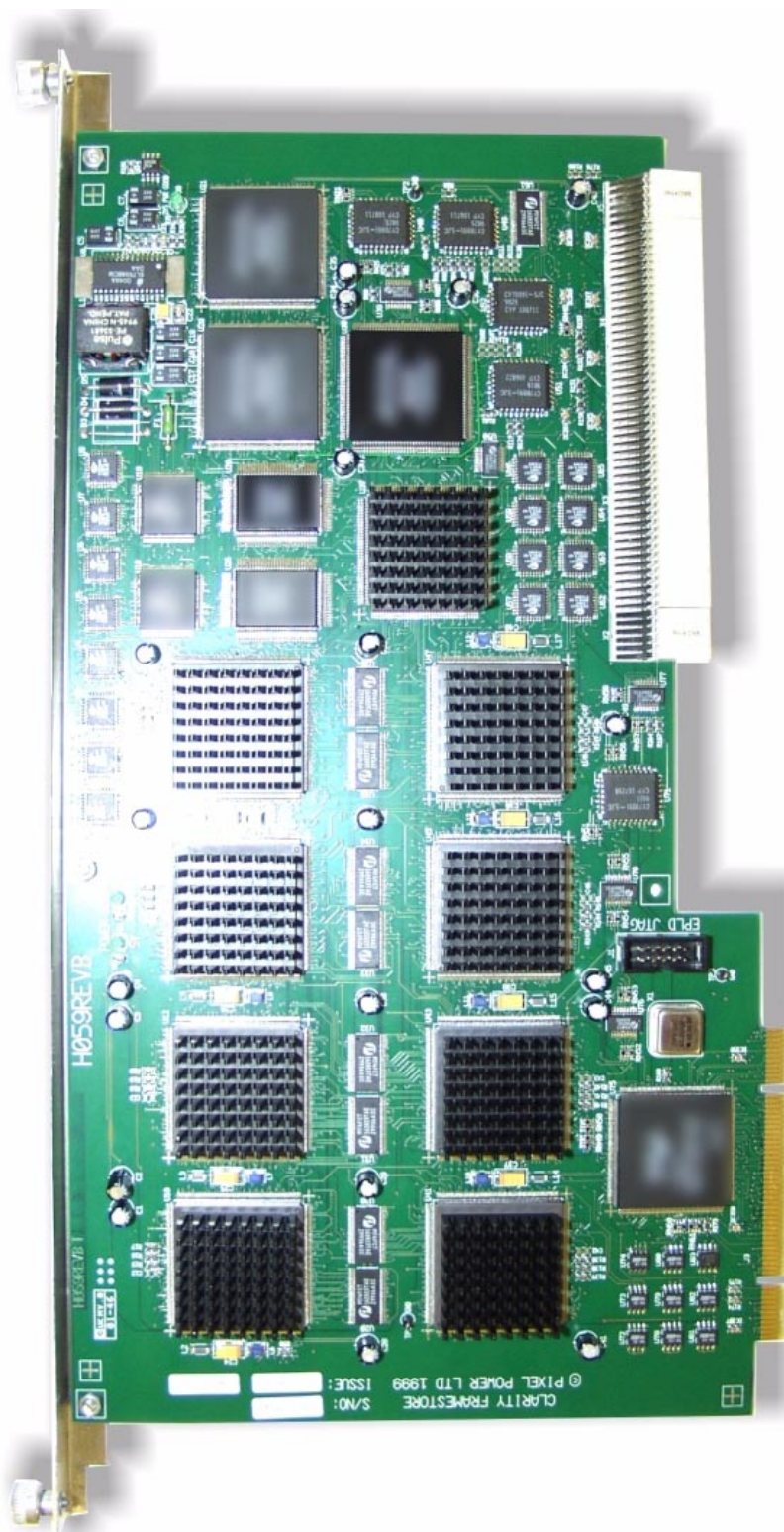
20.3.8 Clarity 5000 STYLE A (dual channel with clips/internal storage)



| Part | Description | PCB Ref |
|------|--|---------|
| 1 | SD/HD Framestore CPU and I/O PCB in H102 Video Backplane slot CH A CPU and CH B CPU (OPTIONAL) | H100 |
| 2 | | |
| 3 | Disk Interface PCB in H102 Video Backplane slot CLIPS (OPTIONAL) | H101 |
| 4 | Front Panel display PCB | H093 |
| 5 | Power Distribution PCB | H108 |
| 6 | Video Backplane PCB | H102 |
| 7 | Rear Panel PCB | H104 |
| 8 | Internal Clip Storage SCSI Backplane (OPTIONAL) | H095 |
| 9 | Serial/GPI/GPO Status Monitor (OPTIONAL) | H097 |
| 10 | Motherboard | |
| 11 | SATA/IDE hard drive | |
| 12 | Floppy drive | |
| 13 | Power Supply | |
| 14 | CD/CD-RW/DVD-RW Drive | |
| 15 | Clip Storage SCSI RAID 0 array (x4 disks) (OPTIONAL) | |

20.4 H059 Standard Definition (SD) and High Definition (HD) Framestore CPU¹

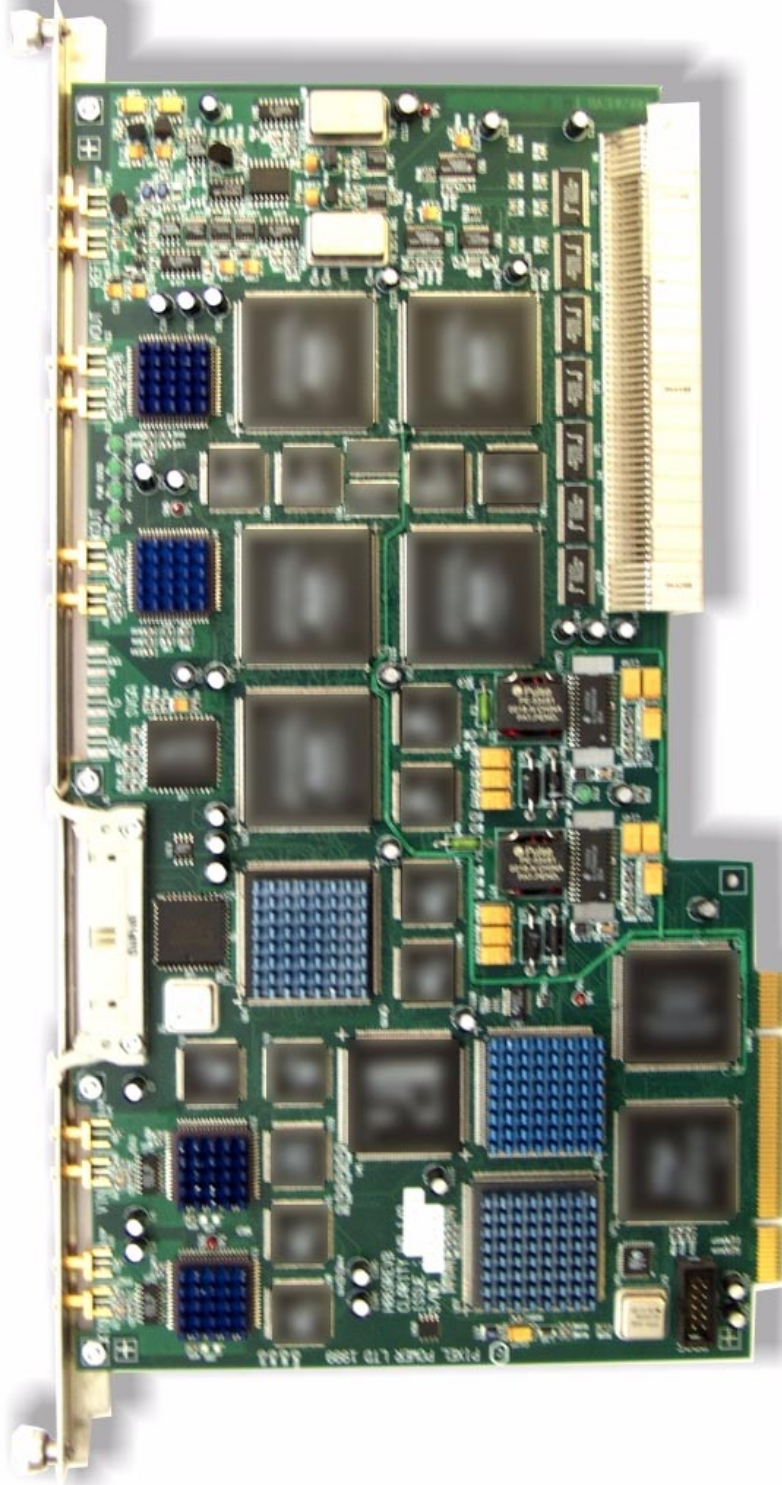
Manages and temporarily stores video frames for distribution between I/O PCB's and the motherboard.



1. Not to scale

20.5 H069 High Definition (HD) Input/Output (I/O)¹

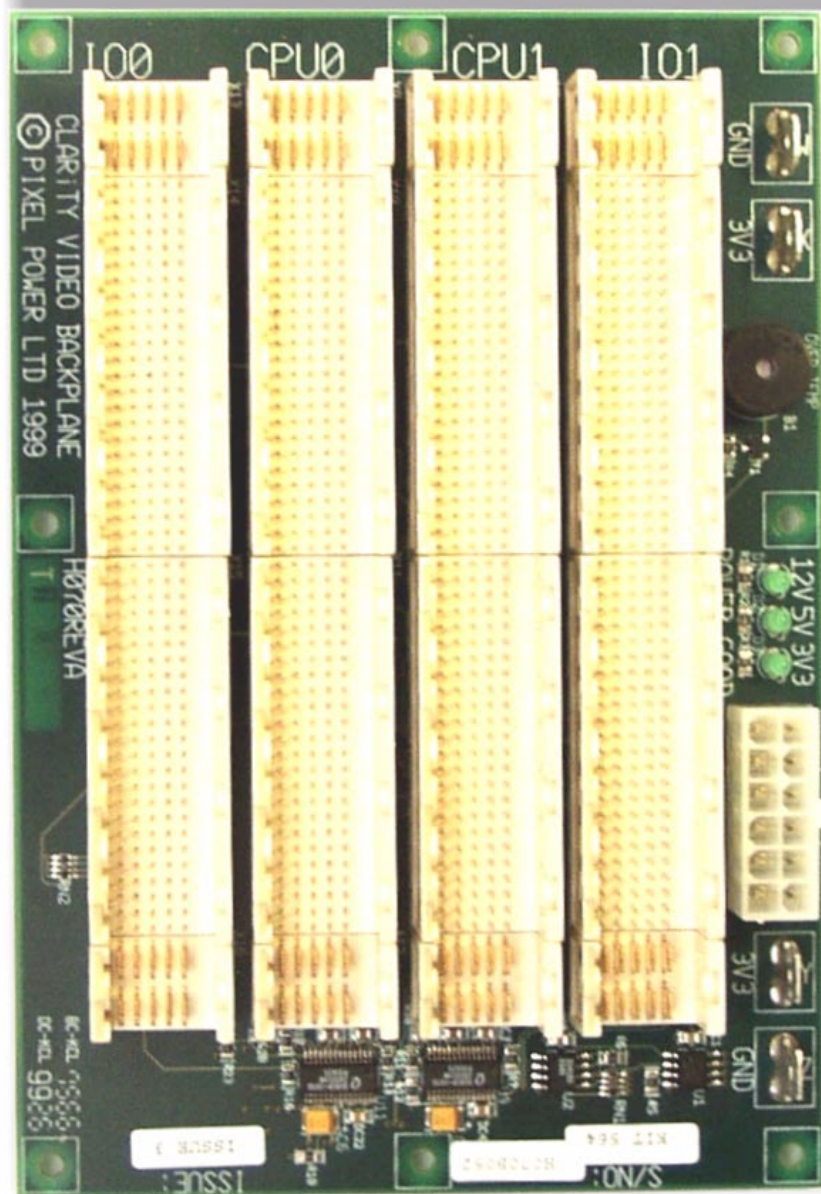
Transmits, receives and manages digital video signals between the H059 Framestore CPU PCB and H070/H094 Video Backplane PCB.



¹.Not to scale

20.6 H070 Video Backplane¹

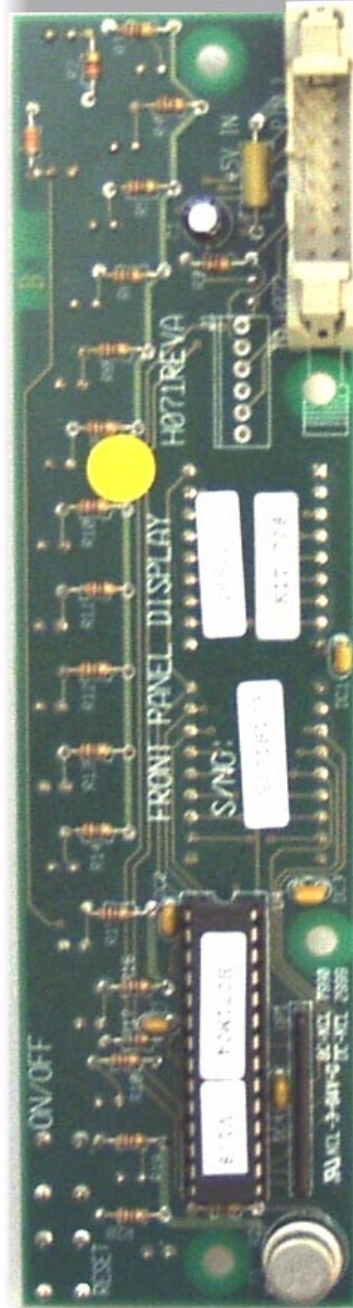
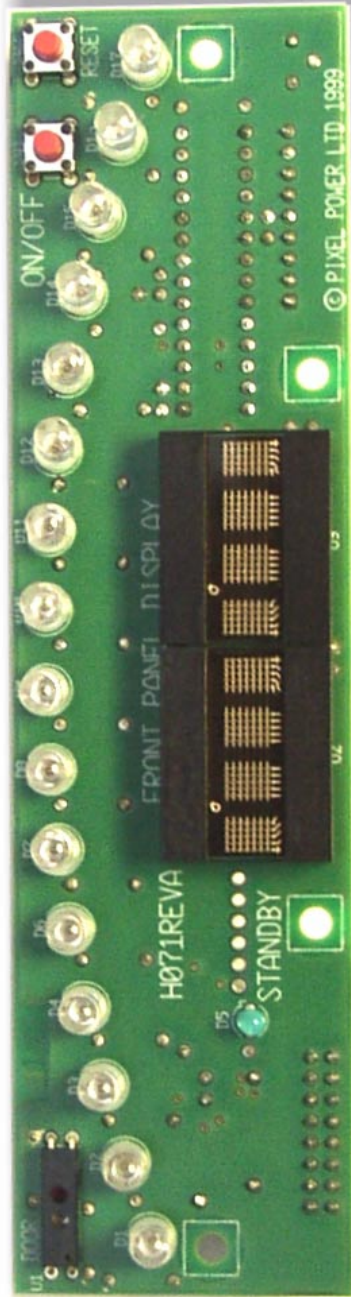
Transmits, receives and manages digital video signals between the H059 CPU, H069 HD I/O, H075 SD I/O, H088 SD CPU and H089 SD I/O and the motherboard PCB.



¹.Not to scale

20.7 H071 Front Panel Display¹

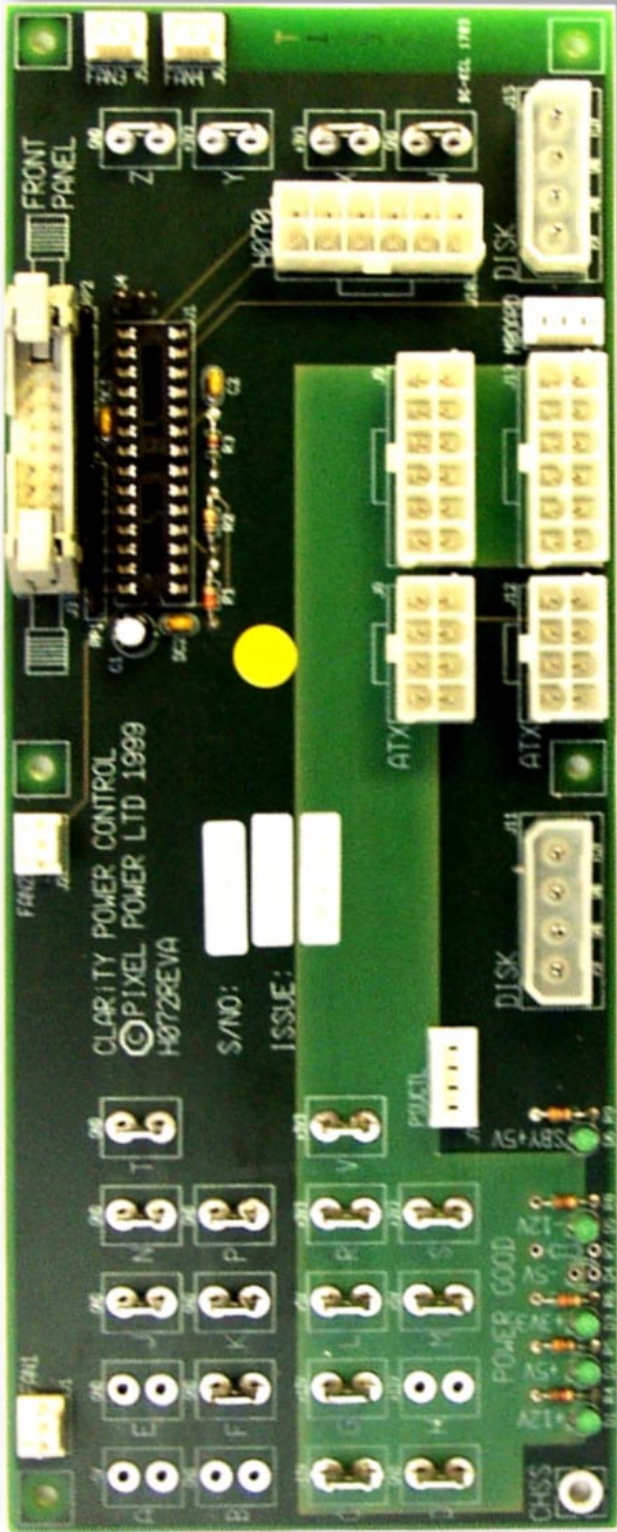
Displays system status via LED's and an 8 character dot matrix display.



¹.Not to scale

20.8 H072 Power Distribution¹

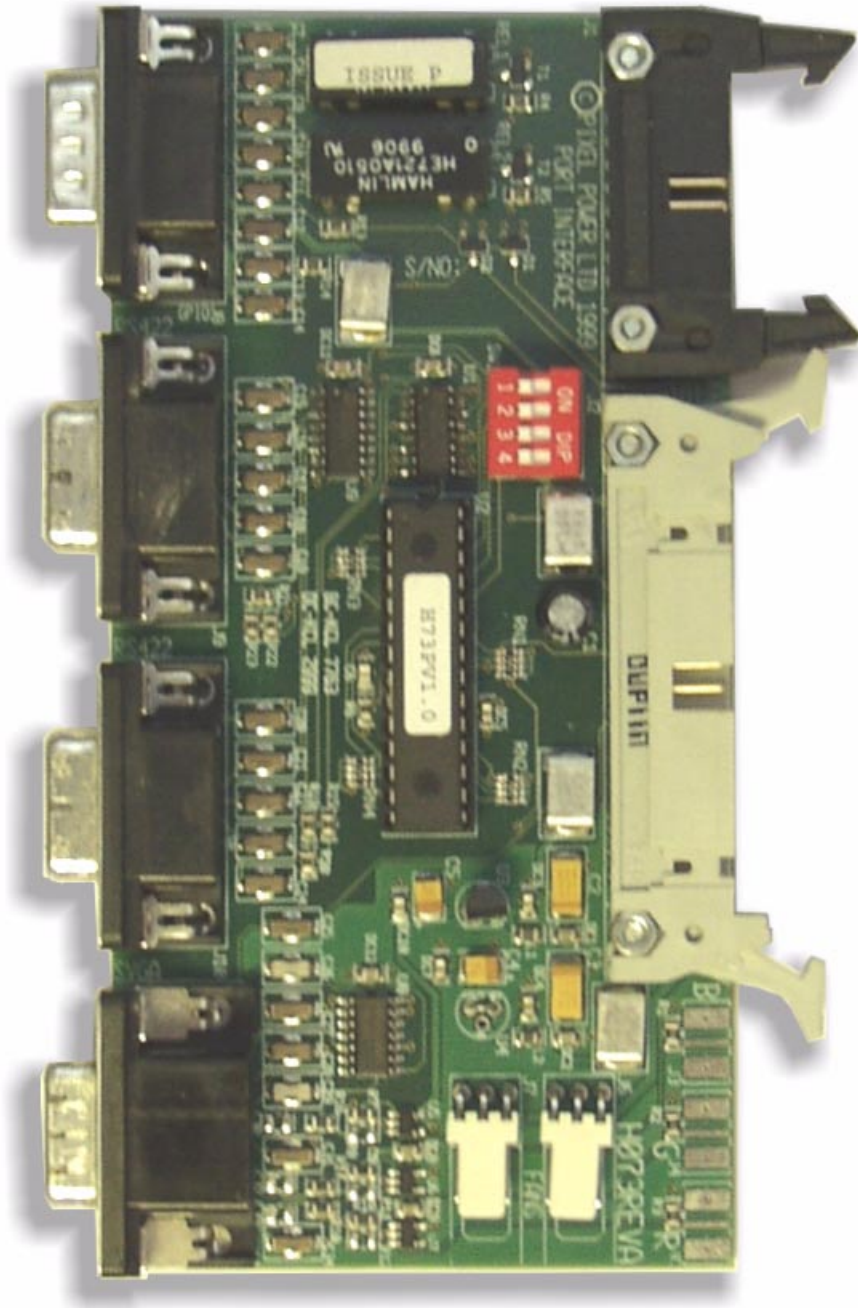
Distributes power from the internal PCB's, drives and cooling fans.



¹.Not to scale

20.9 H073 High Definition (HD) Rear Panel¹

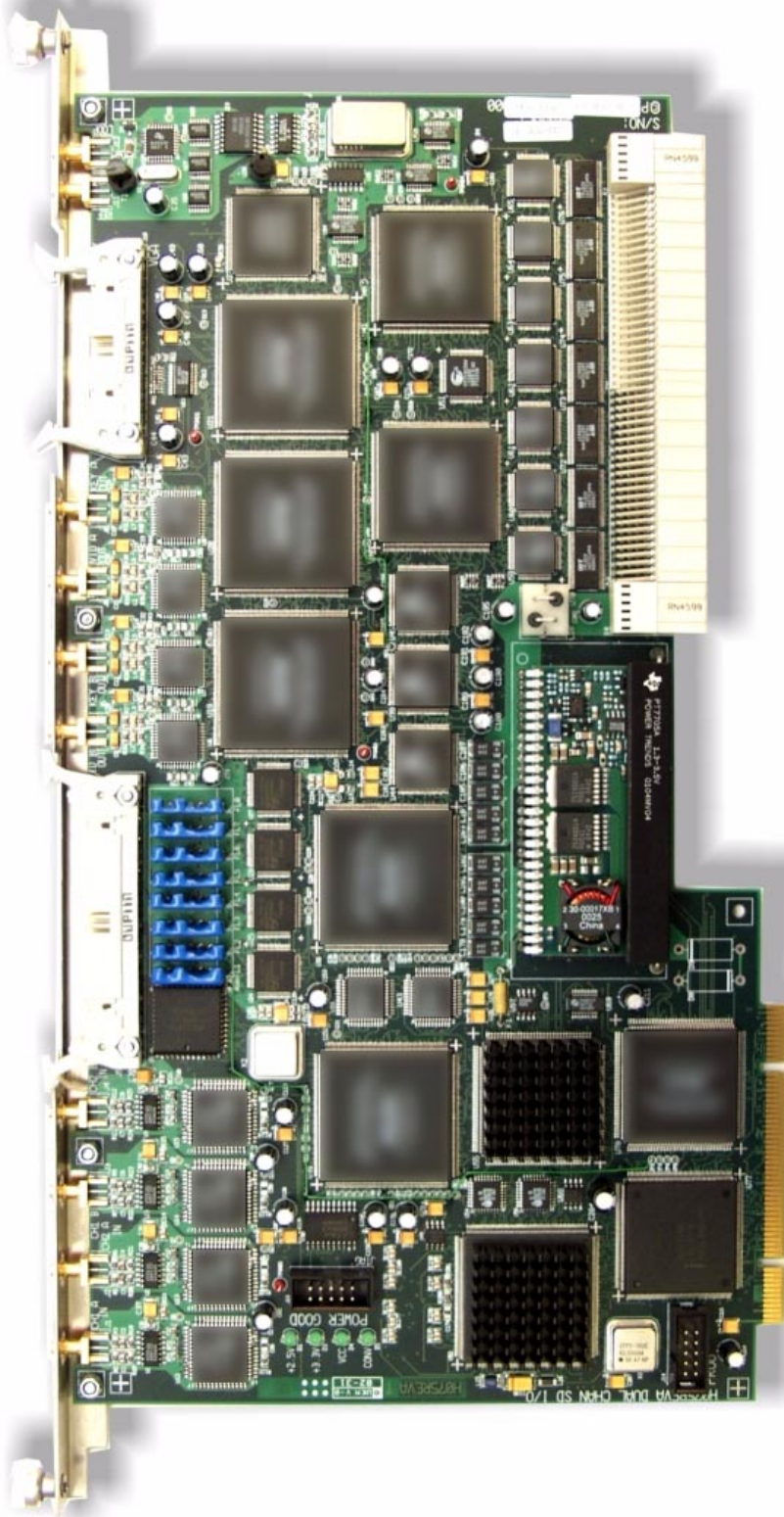
Transmits, receives and manages digital video signals between the framestore and video backplane PCB's.



1. Not to scale

20.10 H075 Standard Definition (SD) Input/Output (I/O)¹

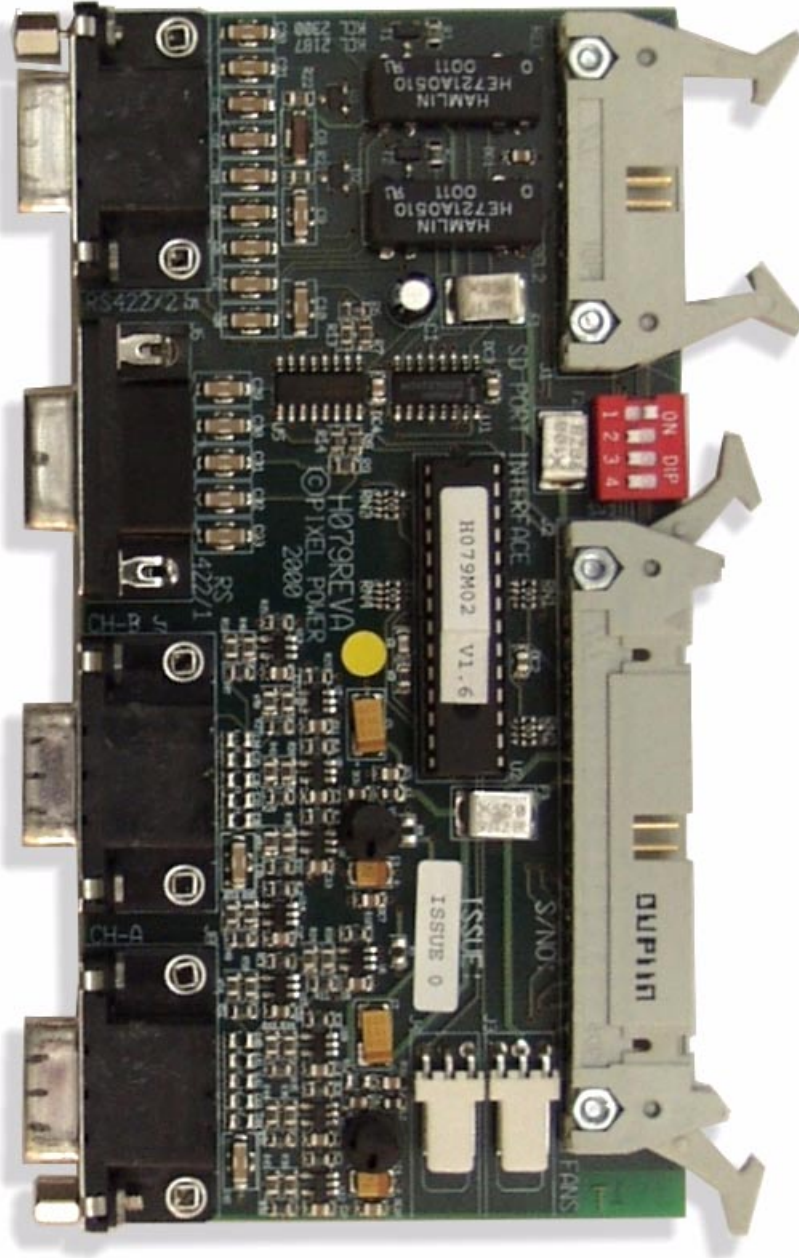
Transmits, receives and manages digital video signals between the framestore and video backplane PCB's.



¹.Not to scale

20.11 H079 Standard Definition (SD) Rear Panel¹

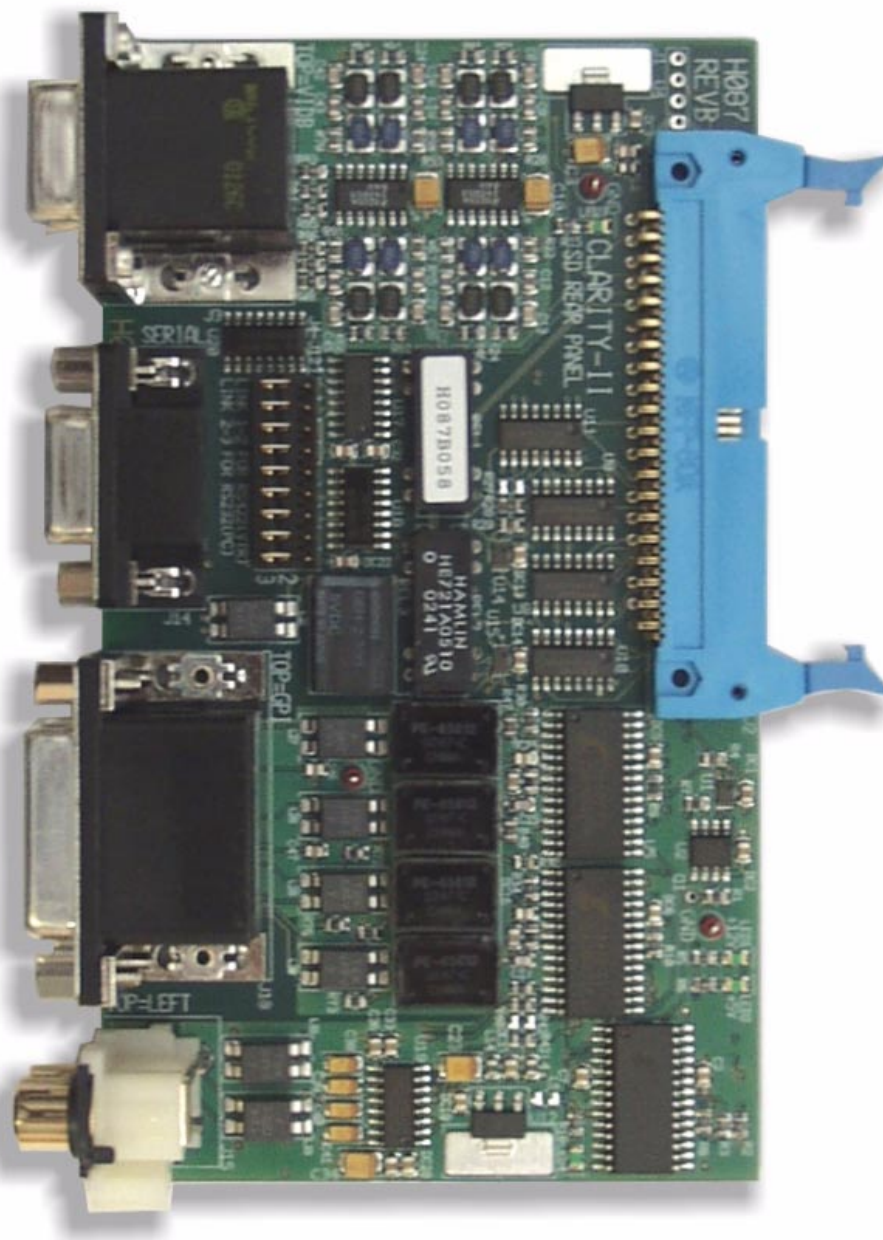
Transmits, receives and manages digital video signals between the framestore and video backplane PCB's.



¹.Not to scale

20.12 H087 Standard Definition (SD) Rear Panel + Audio¹

Transmits, receives and manages digital video signals between the framestore and video backplane PCB's. Also provides facility for transmitting/receiving/managing audio signals if required.



¹.Not to scale

20.13 H088 Standard Definition (SD) Framestore CPU¹

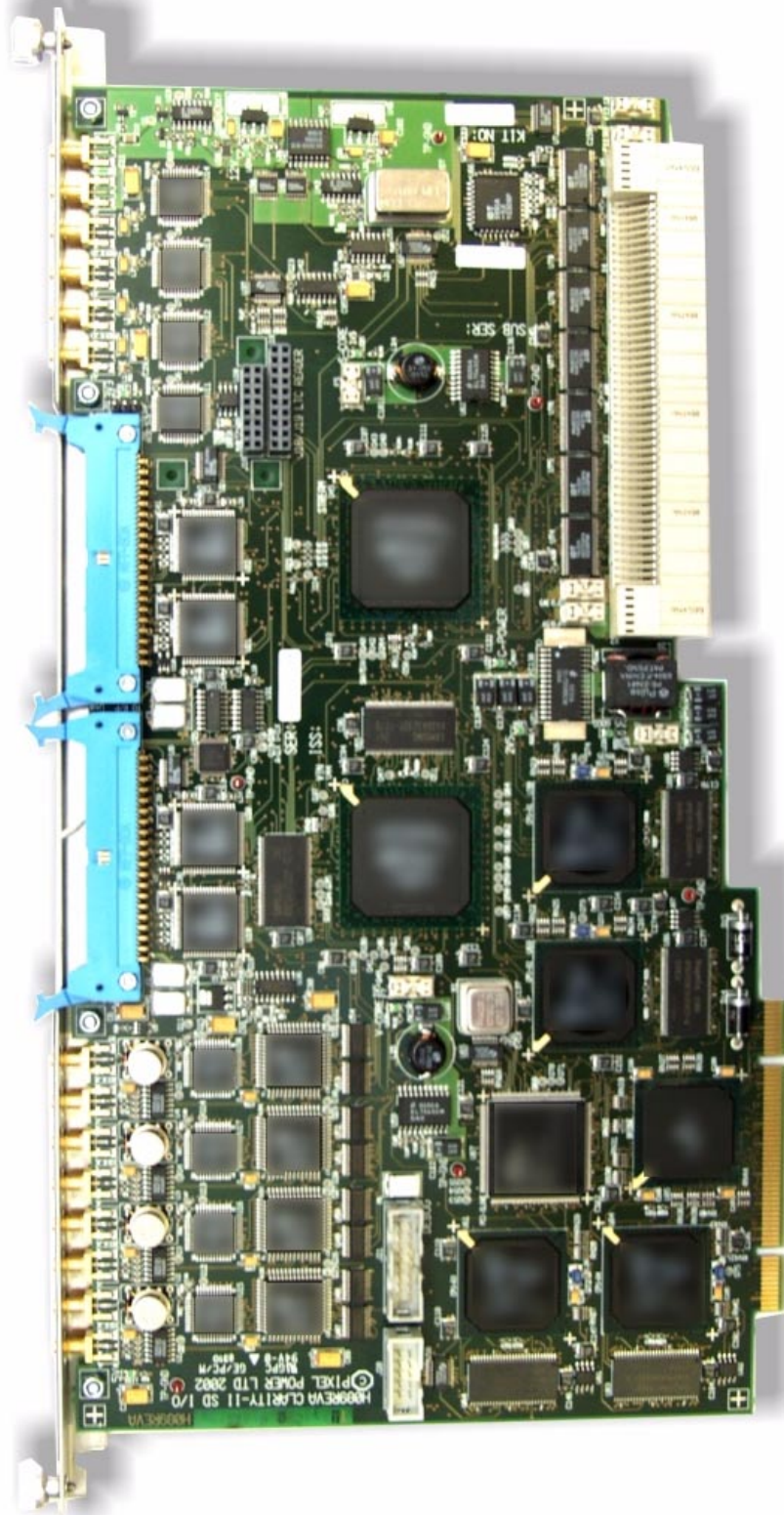
Manages and temporarily stores video frames for distribution between I/O PCB's and the motherboard.



¹.Not to scale

20.14 H089 Standard Definition (SD) Input/Output (I/O) + Audio¹

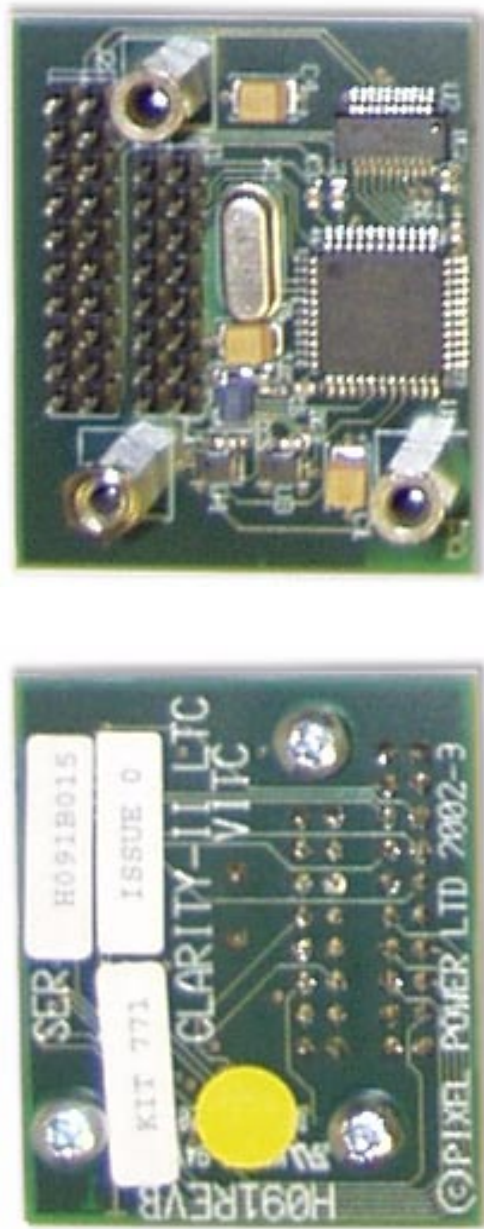
Transmits, receives and manages digital video signals between the framestore and video backplane PCB's. Also provides facility for transmitting/receiving/managing audio signals if required.



¹.Not to scale

20.15 H091 LTC/VITC Timecode Reader¹

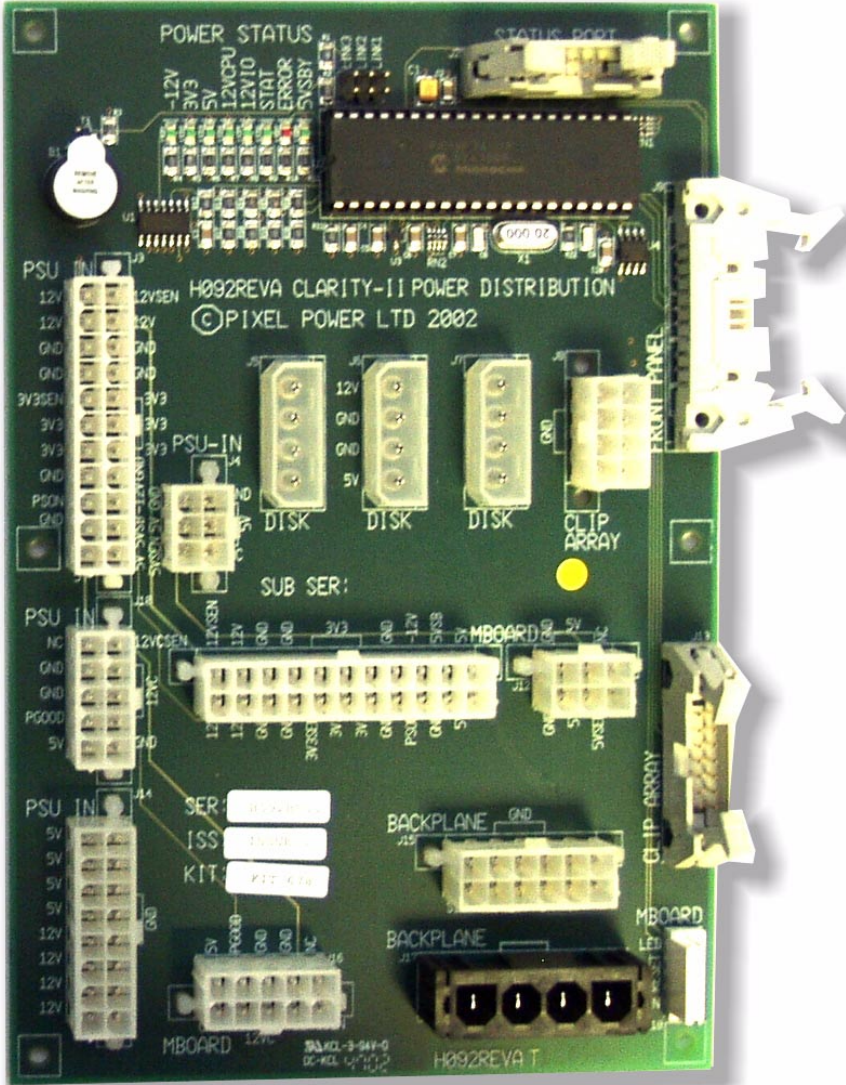
Enables the system to read LTC and VITC timecode from audio and video streams. Installed on the H089 SD CPU I/O + Audio PCB.



¹.Not to scale

20.16 H092 Power Distribution¹

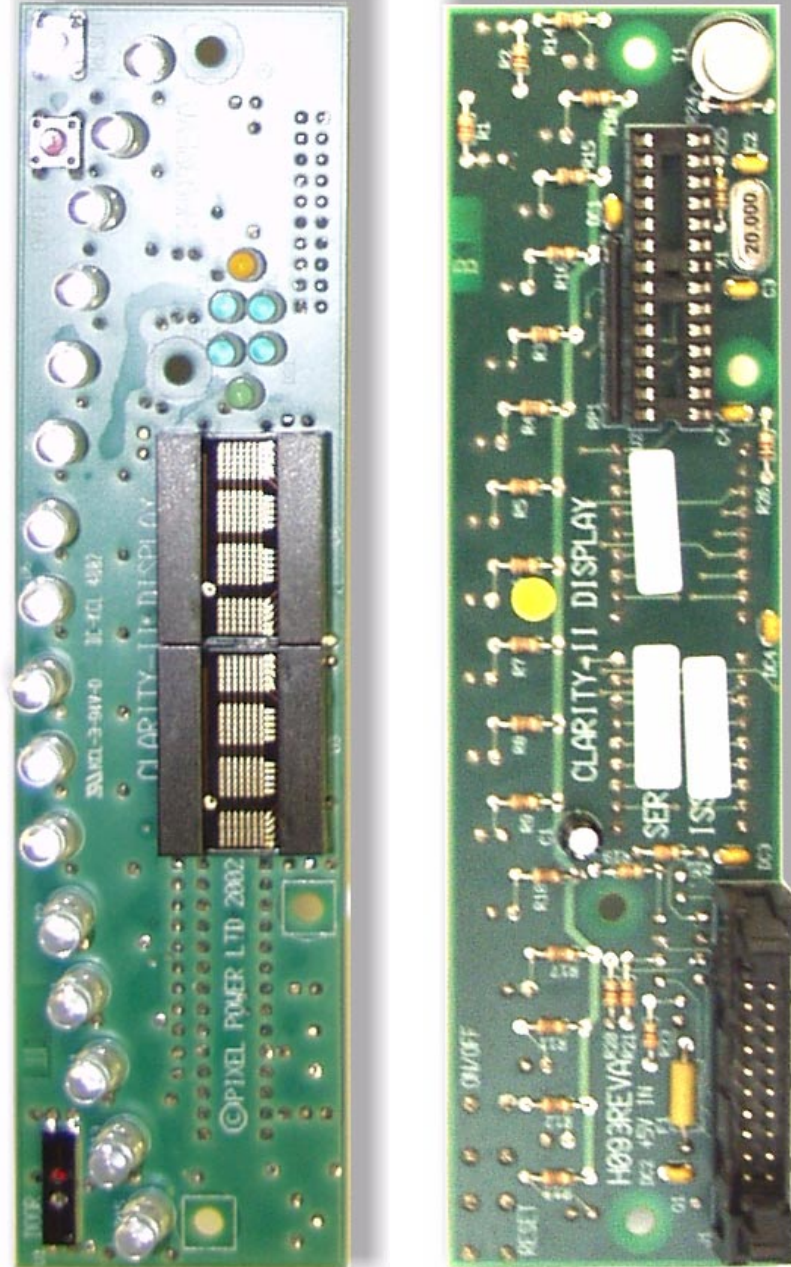
Distributes power from the internal PCB's, drives and cooling fans.



¹.Not to scale

20.17 H093 Front Panel Display¹

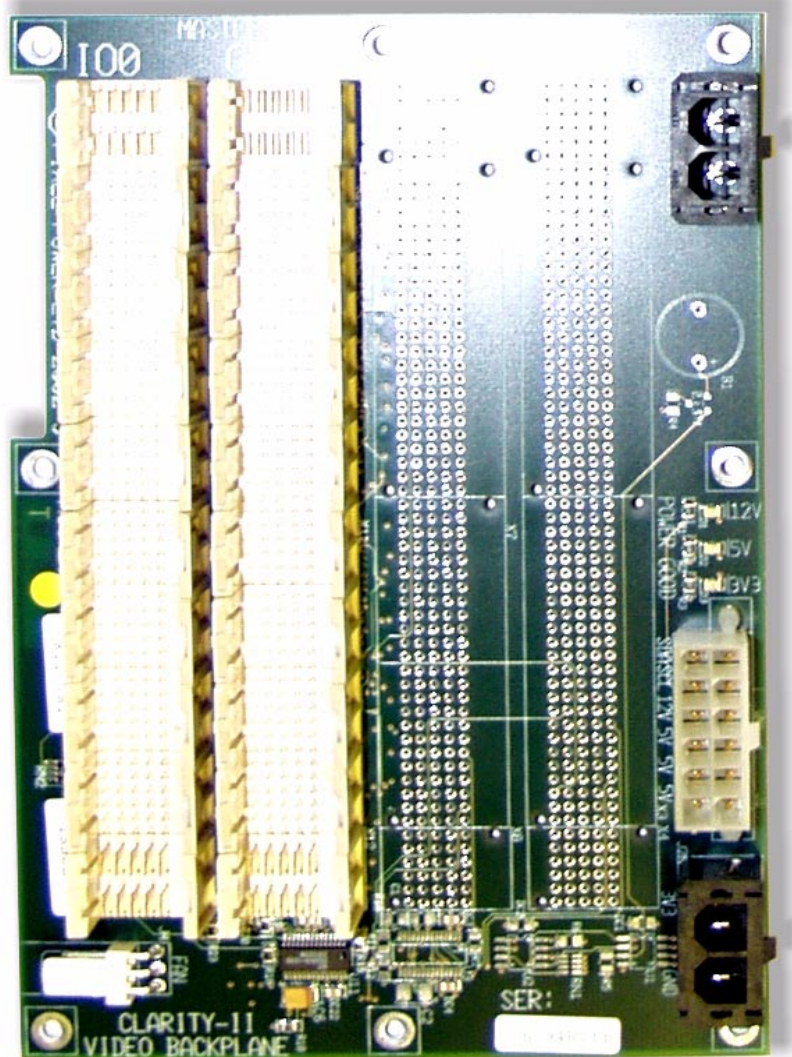
Displays system status via LED's and an 8 character dot matrix display. Features additional LED's for internal clip storage and redundant power supply status.



¹.Not to scale

20.18 H094 Video Backplane¹

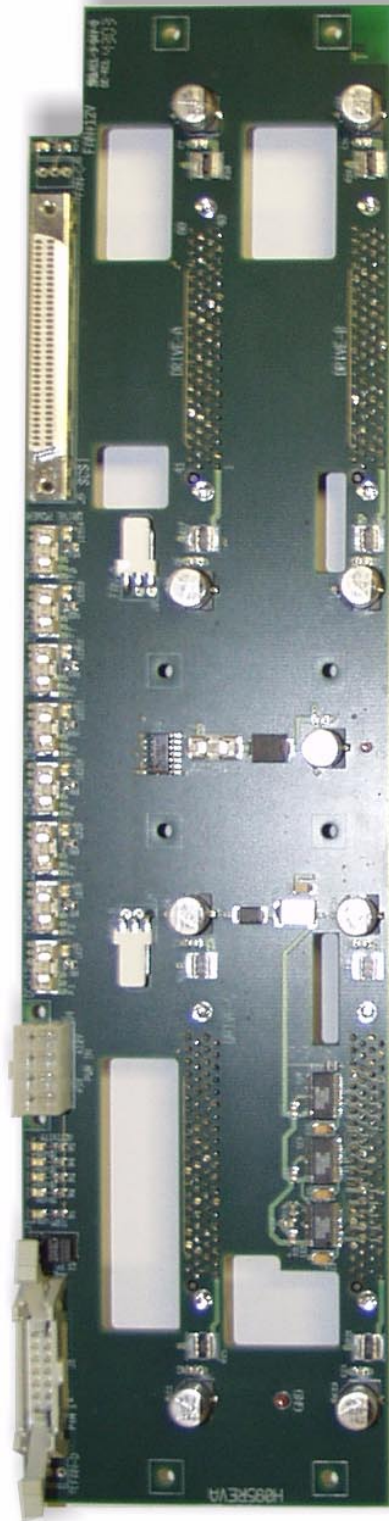
Transmits, receives and manages digital video signals between the H059 CPU, H069 HD I/O, H075 SD I/O, H088 SD CPU and H089 SD I/O and the motherboard PCB.



¹.Not to scale

20.19 H095 Internal Clip Storage SCSI Backplane¹

Enables the system to access video and audio clips split over the optional 4 x internal SCSI hard disk drives (RAID 0 configuration), via the system SCSI interface.



1. Not to scale

20.20 H096 Standard Definition (SD) Framestore CPU and Input/Output (I/O) + Audio¹

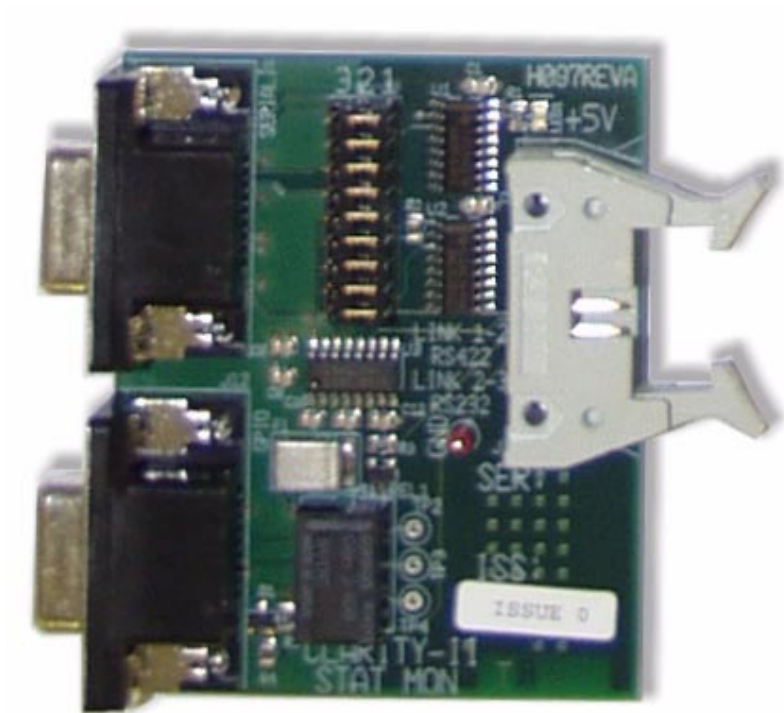
Manages and temporarily stores video frames for distribution between I/O PCB's and the motherboard. Also provides facility for transmitting/receiving/managing audio signals if required.



1. Not to scale

20.21 H097 Serial/GPI/GPO Status Monitor¹

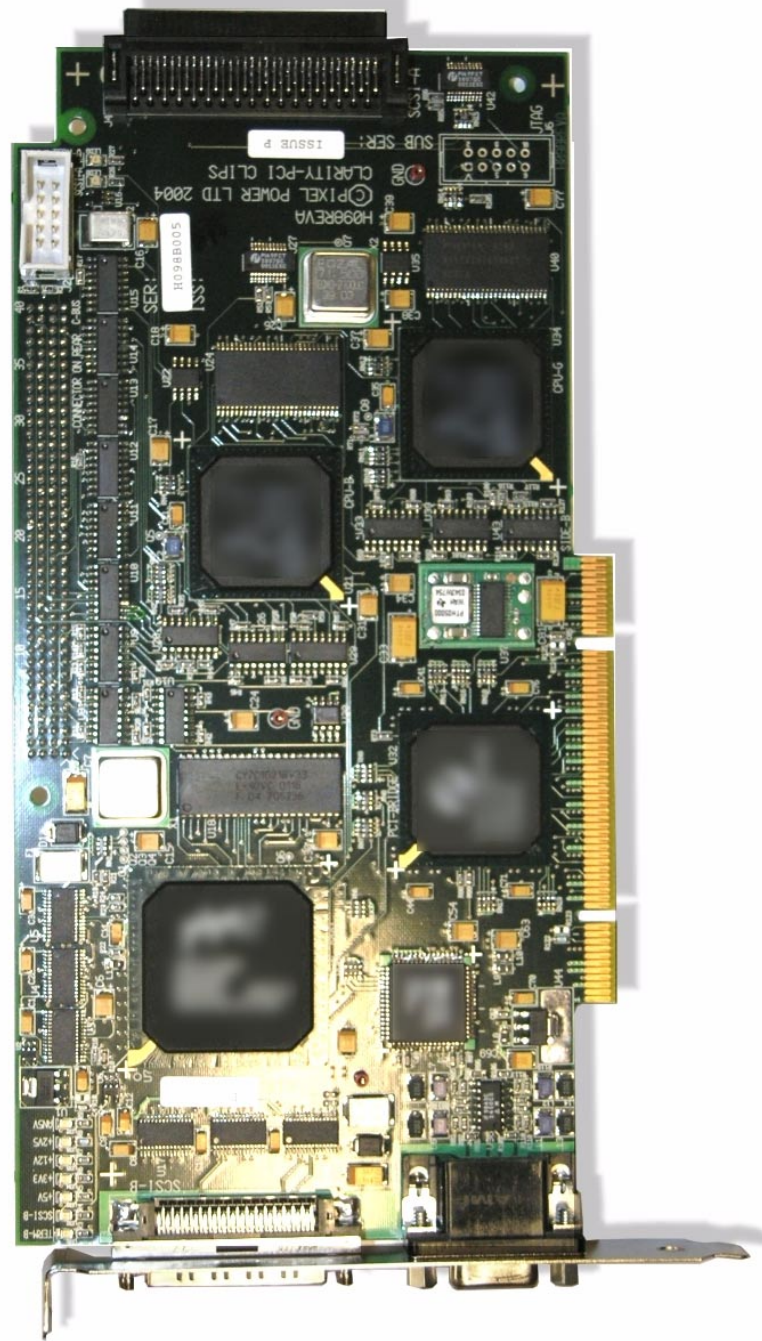
Provides status monitor capabilities via serial RS232 and GPI/GPO.



¹.Not to scale

20.22 H098 Standard Definition (SD) Clip Processing and Input/Output (I/O)¹

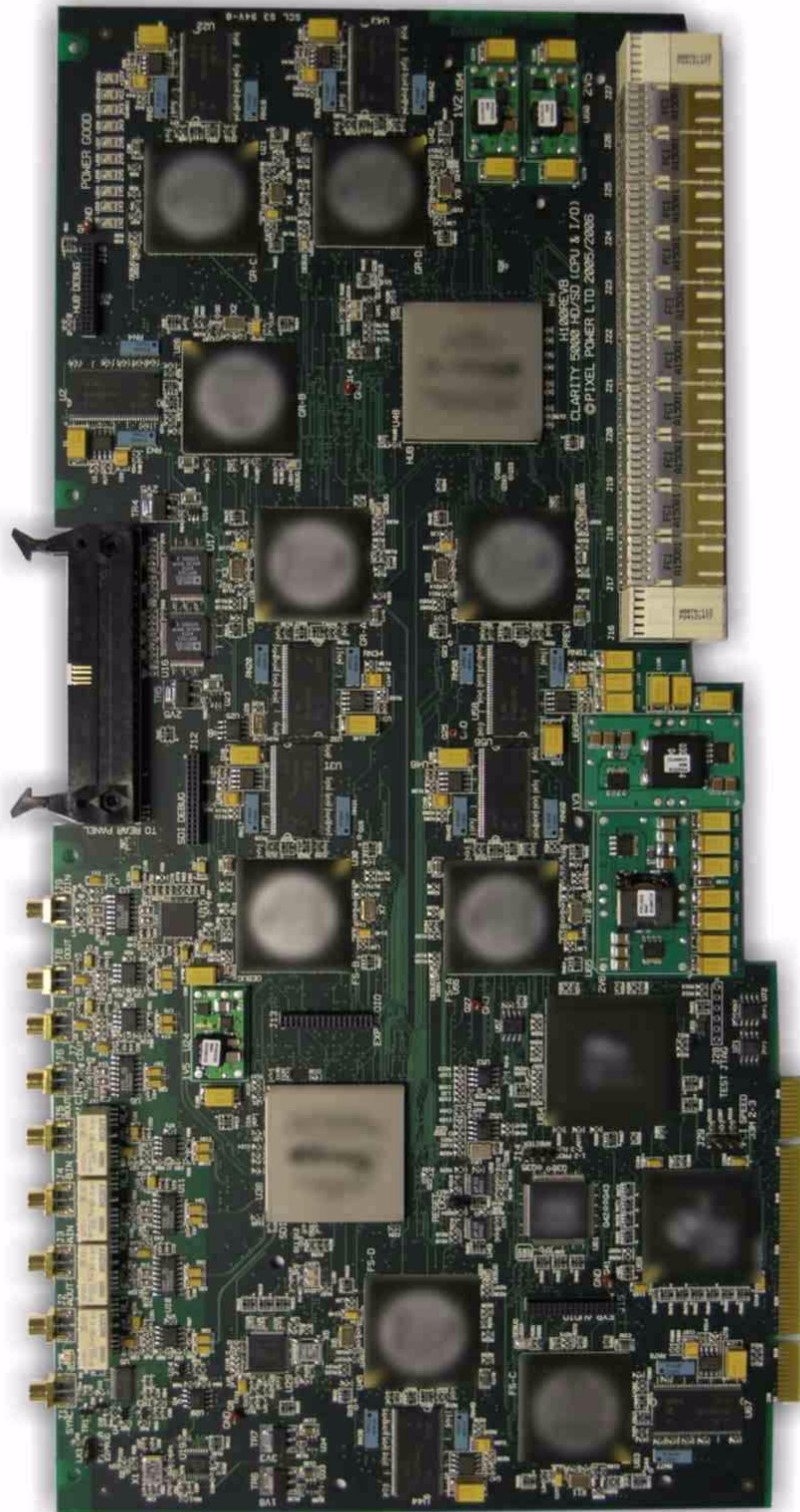
Transmits, receives and manages digital video signals between the clip storage system and the H096 Standard Definition (SD) Framestore CPU and Input/Output (I/O) + Audio PCB.



¹.Not to scale

20.23 H100 Standard Definition/High Definition (SD/HD) Framestore CPU and Input/Output + Audio¹

Manages and temporarily stores video frames for distribution between I/O PCB's and the motherboard. Also provides facility for transmitting/receiving/managing audio signals if required.



¹.Not to scale

20.24 H101 Disk Interface¹

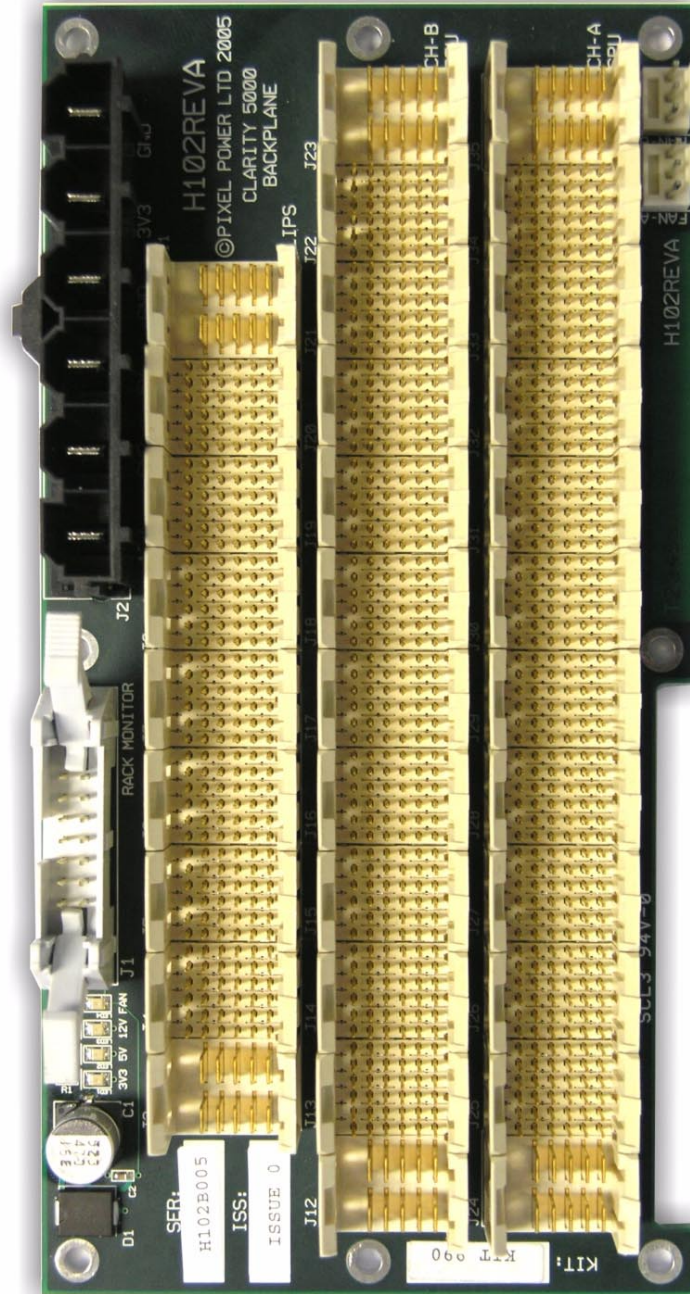
Transmits, receives and manages digital video signals between the clip storage system and the H100 Framestore CPU and Input/Output (I/O) PCB.

Illustration not yet available.

¹.Not to scale

20.25 H102 Video Backplane¹

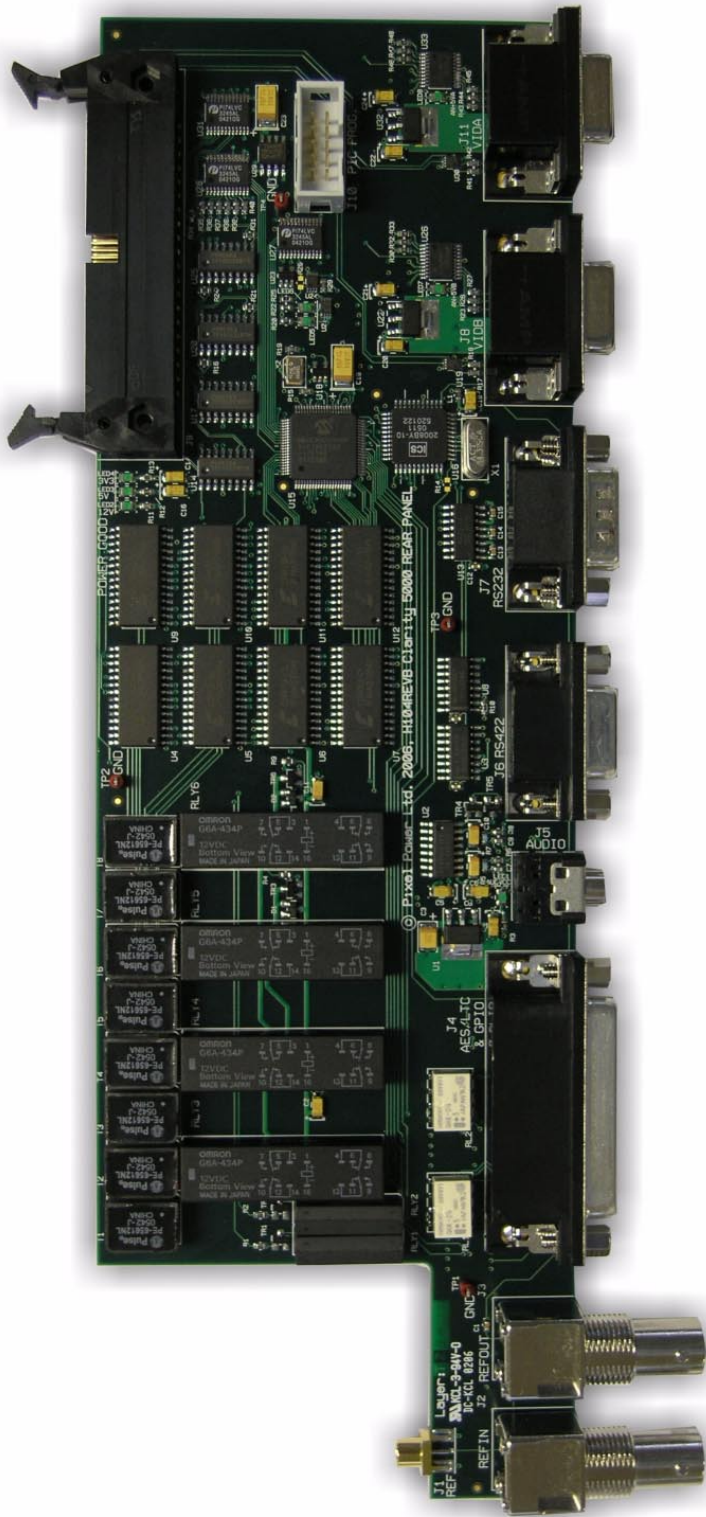
Transmits, receives and manages digital video signals between the H100 SD/HD CPU I/O, H101 Disk Interface and the motherboard PCB.



¹.Not to scale

20.26 H104 Standard Definition/High Definition (SD/HD) Rear Panel¹

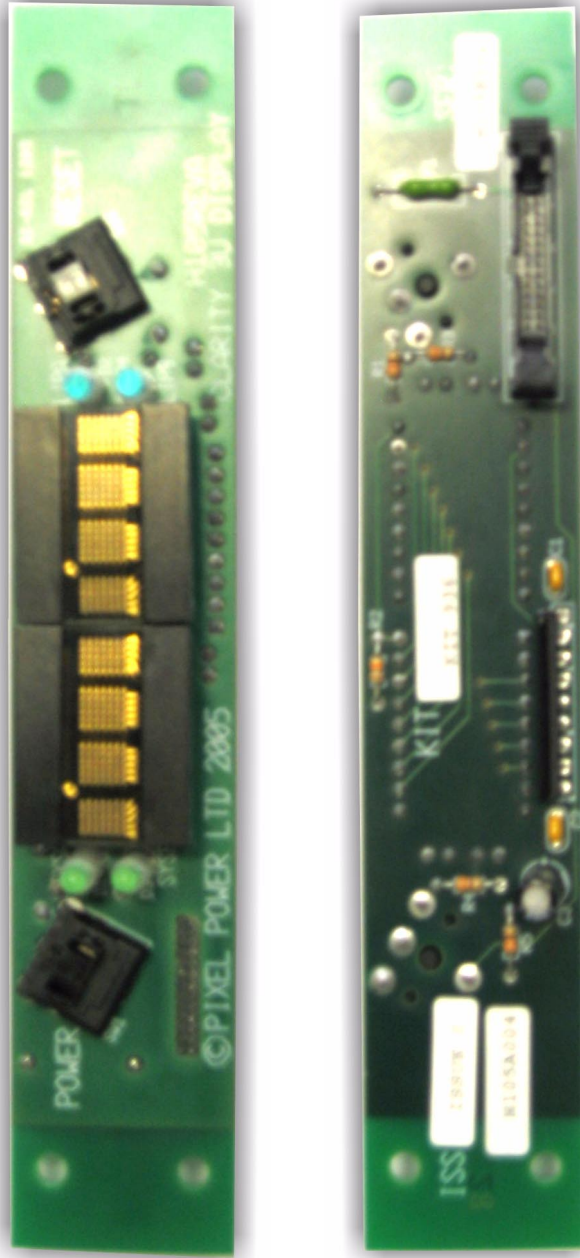
Transmits, receives and manages digital video signals between the framestore and video backplane PCB's. Also provides facility for transmitting GPI/O, digital audio, bypass tally and LTC signals if required.



¹.Not to scale

20.27 H105 Front Panel Display¹

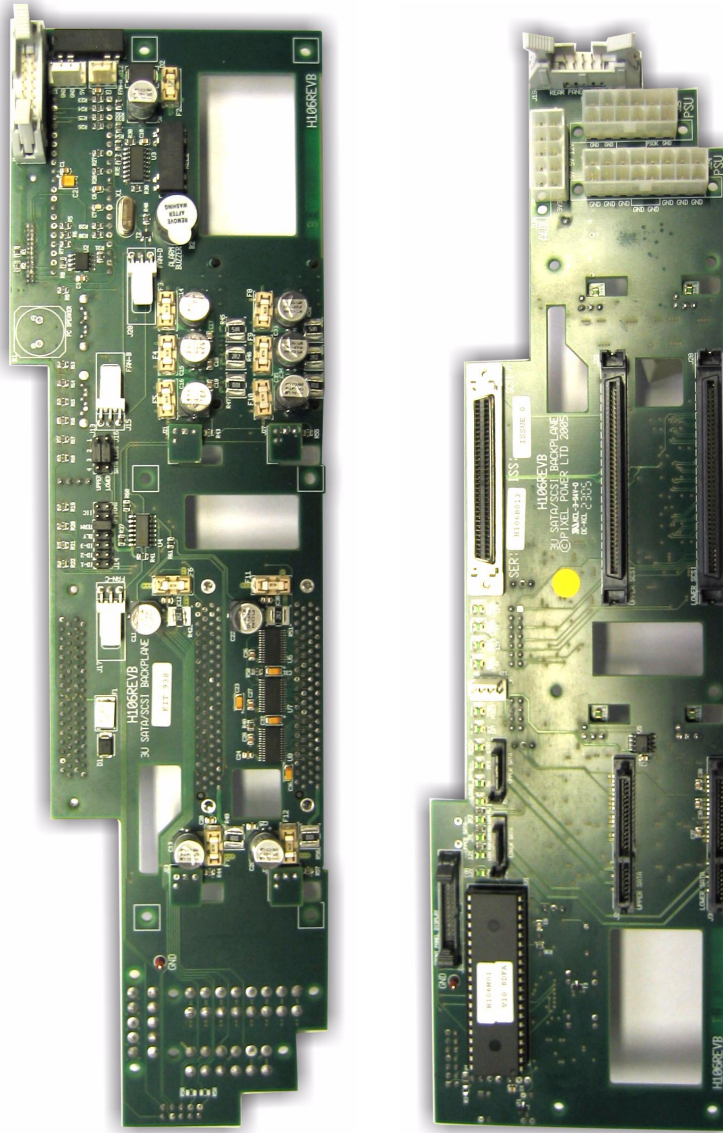
Displays system status via LED's and an 8 character dot matrix display. Features additional LED's for internal clip storage and SATA system disk monitoring.



¹.Not to scale

20.28 H106 SCSI/SATA/Power System Backplane¹

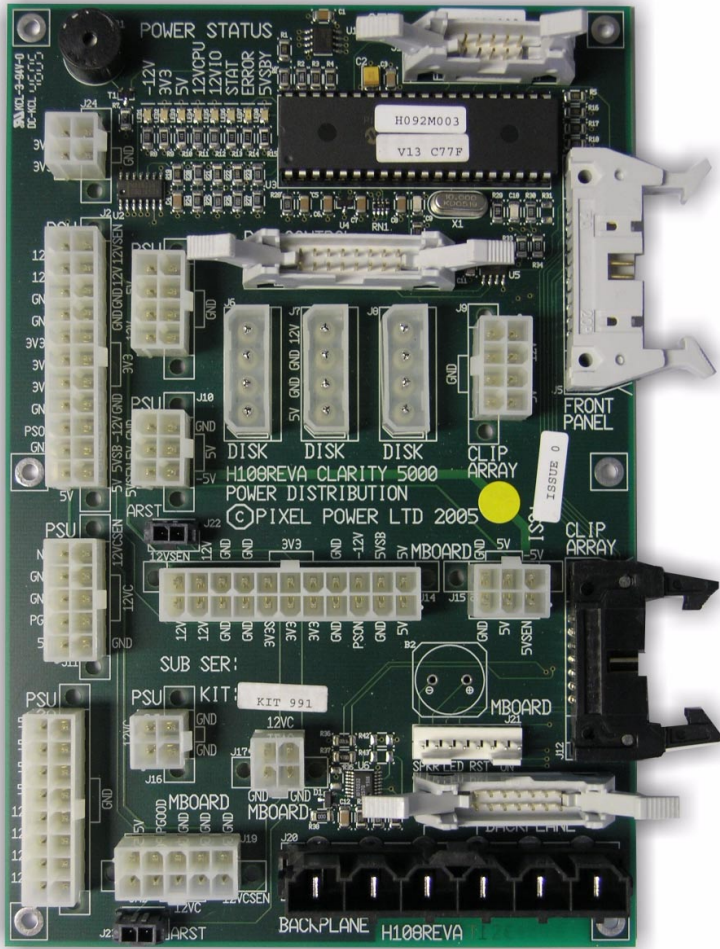
Supplies power to internal system components and enables the system to access the 2 x internal SATA system hard disk drives (RAID 1 mirrored configuration). Also enables the system to access video and audio clips split over the optional 2 x internal SCSI hard disk drives (RAID 0 configuration), via the system SCSI interface.



¹.Not to scale

20.29 H108 Power Distribution¹

Distributes power from the internal PCB's, drives and cooling fans.



¹.Not to scale

20.30 H111 Standard Definition (SD) and High Definition (HD) Input/Output (I/O) + Audio¹

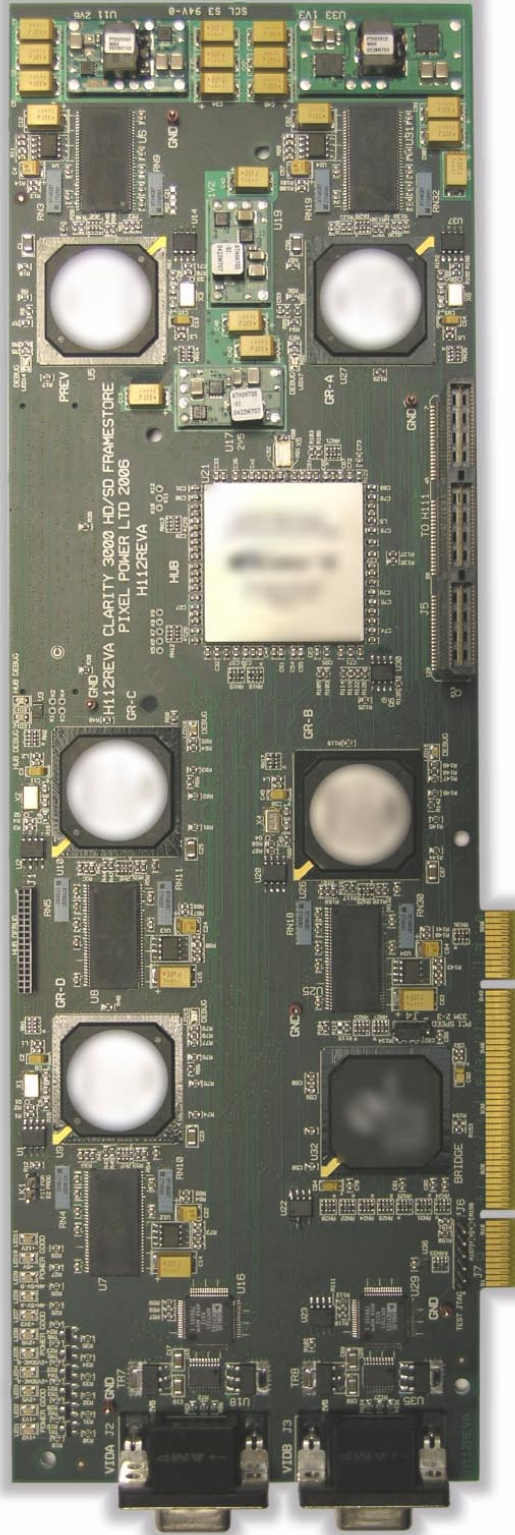
Transmits, receives and manages digital video signals between the H112 SD/HD Framestore CPU PCB and the motherboard.



1. Not to scale

20.31 H112 Standard Definition (SD) and High Definition (HD) Framestore CPU¹

Manages and temporarily stores video frames for distribution between the H111 SD/HD I/O PCB and the motherboard.



1. Not to scale

20.32 H113 Disk Interface¹

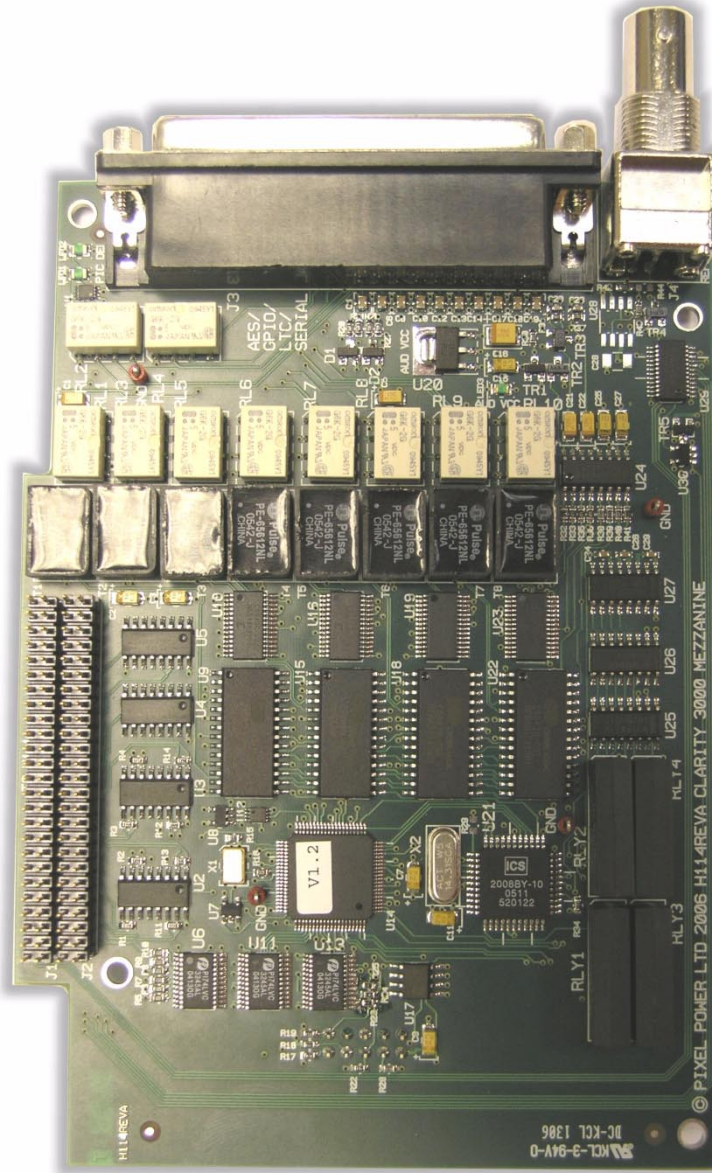
Transmits, receives and manages digital video signals between the clip storage system and the H112 SD/HD Framestore CPU PCB.

Illustration not yet available.

1. Not to scale

20.33 H114 Interface Mezzanine¹

Enables additional rear panel connectivity. Installed on the H111 SD/HD I/O PCB.



¹.Not to scale

20. Inside a System Unit [CLARITY]

21. Performing Maintenance and Upgrades [CLARITY]

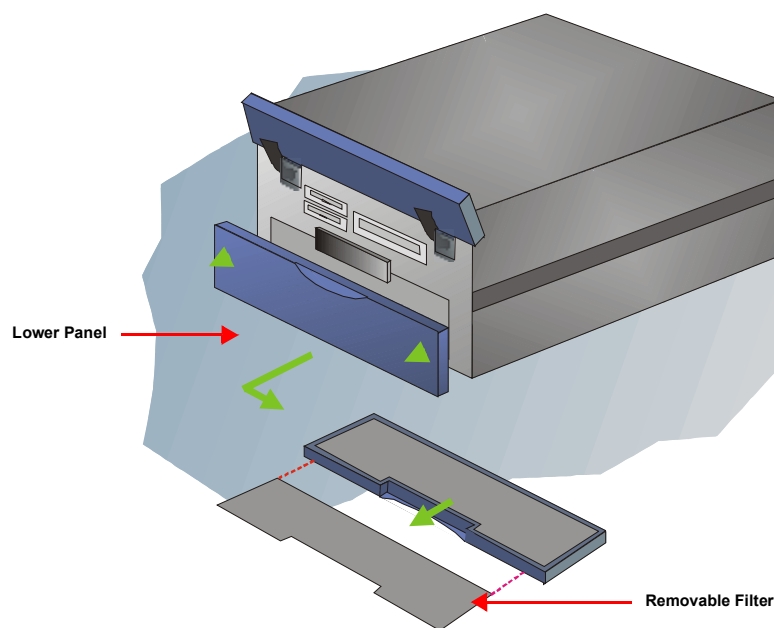
21.1 Air filter maintenance

The air filter should be cleaned whenever it appears visibly dirty, otherwise airflow through the system unit will be reduced, causing increased temperature within the chassis. To clean or replace the air filter, refer to the sections below.

21.1.1 Clarity 5U system unit air filter removal

1. Lift the top panel up to expose the media drives. On the top edge of the lower panel are two cutouts.
2. Pull the lower panel away, using the cutouts as leverage points. The panel will clip out from the front of the system unit chassis.

F-182 5U Clarity system front panel air filter removal



3. The filter is now exposed and can be removed for cleaning or renewal.

21.1.2 Clarity 3U system unit air filter removal

1. Pull the front panel away, using the cutouts in each side of the the cover as leverage points. The panel will clip out from the front of the system unit chassis.
2. The filter is now exposed and can be removed for cleaning or renewal.

21.1.3 Cleaning and replacing the air filter

1. To clean the filter, use a vacuum cleaner to remove the dust.
2. If renewing the filter, use only the correct item from Pixel Power (Part number: PP2405) as the correct flammability rating is required.
3. Reverse the instructions to rebuild the front panel and fit it back onto the Clarity system unit.



21. Performing Maintenance and Upgrades [CLARITY]

21.2 Electrical safety

21.2.1 Foreword and symbols

This section is specifically aimed at persons maintaining a Clarity system unit. To derive maximum benefit from this section, the person(s) removing any PCB's from a system unit or IC's from a PCB are assumed to have experience of installing and upgrading electronic equipment. Several symbols are used within this section to draw your attention to important information. These symbols and their use are described below:

T-100 Symbols

| Symbol | Description |
|---|--|
|  | A warning indicates that the described activity or situation is very important to safeguard your safety and the prevent any damage to equipment. |
|  | Notes provide information that may be of special interest |

21.2.2 Mandatory standards, safety regulations and warnings

The following section details important information that you should read before attempting to remove any PCB's from a system unit chassis. If you think any stage of the upgrade is likely to expose an exceptional risk either to personnel or the equipment, you should report this to the your authorised Pixel Power dealer or contact Pixel Power support and await advice before proceeding.

21.2.2.1 Standards

Work should conform to the latest edition of the relevant standards applicable in the country of work. In the UK these standards include:

- IEE Wiring Regulations.

21.2.2.2 Health and safety issues

The health and safety guidelines and mandatory procedures for the country in which the work is conducted should be followed at all times. These will determine matters such as:

- Working with dangerous voltages.

Engineers should ensure that they are familiar with health and safety requirements.

21.2.2.3 Anti-static precautions

Please make sure that you take the necessary precautions (anti-static mat and wrist strap) to reduce the possibility of component damage as a result of electro-static discharge.

21.2.3 Safety steps before working

Whenever you remove the chassis cover to reveal the inside of a system unit, follow these steps:

1. Turn off all peripheral devices connected to the system unit.
2. Turn off the system unit by pressing the power button.
3. Unplug all AC power cords from the system unit or from wall outlets.
4. Label and disconnect all cables connected to I/O connectors or ports on the back of the system unit.
5. Provide some electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to chassis ground of the system unit (any un-painted metal surface) when handling components.
6. Do not operate the system unit with the chassis covers removed.

21.3 Replacement of PSU fuse



When replacement is necessary, only fuses of the correct rating should be used. Your warranty may be invalidated if fuses of an incorrect rating are used.

21.3.1 Legacy systems


[LEGACY]

21.3.1.1 Clarity STYLE A and Clarity 2 STYLE B rear panel

[LEGACY]

The IEC 3-pin Power Socket mounted on the Clarity STYLE A and STYLE B rear panel houses the following fuse:

T-101 Clarity STYLE A and Clarity 2 STYLE B rear panel fuse replacement

| Country | Voltage | Fuse Rating (Amps) | Fuse Location |
|---------|---------|--------------------|---|
| UK | 240V | T3.15A |  |
| USA | 110V | T6.3A | |

21.3.1.2 Clarity 2 STYLE C rear panel

[LEGACY]

The IEC 3-pin Power Socket (s) on the standard and dual-redundant PSU DO NOT house any user-replaceable fuses. They are fused internally with power re-set fuses.

21.3.1.3 Clarity 2 STYLE D rear panel

[LEGACY]

The IEC 3-pin Power Socket on the standard PSU DOES NOT house any user-replaceable fuses. It is fused internally with power re-set fuses.

21.3.2 Current systems

21.3.2.1 1U system units

The IEC 3-pin Power Socket on the standard PSU DOES NOT house any user-replaceable fuses. It is fused internally with power re-set fuses.

21.3.2.2 2U system units

The IEC 3-pin Power Socket (s) on the standard and dual-redundant PSU DO NOT house any user-replaceable fuses. They are fused internally with power re-set fuses.

21.3.2.3 3U system units

The IEC 3-pin Power Socket (s) on the standard and dual-redundant PSU DO NOT house any user-replaceable fuses. They are fused internally with power re-set fuses.

21.3.2.4 5U System units

The IEC 3-pin Power Socket (s) on the standard and dual-redundant PSU DO NOT house any user-replaceable fuses. They are fused internally with power re-set fuses.

21. Performing Maintenance and Upgrades [CLARITY]

21.4 Clarity 100 STYLE A maintenance and upgrades

The following procedures are available:

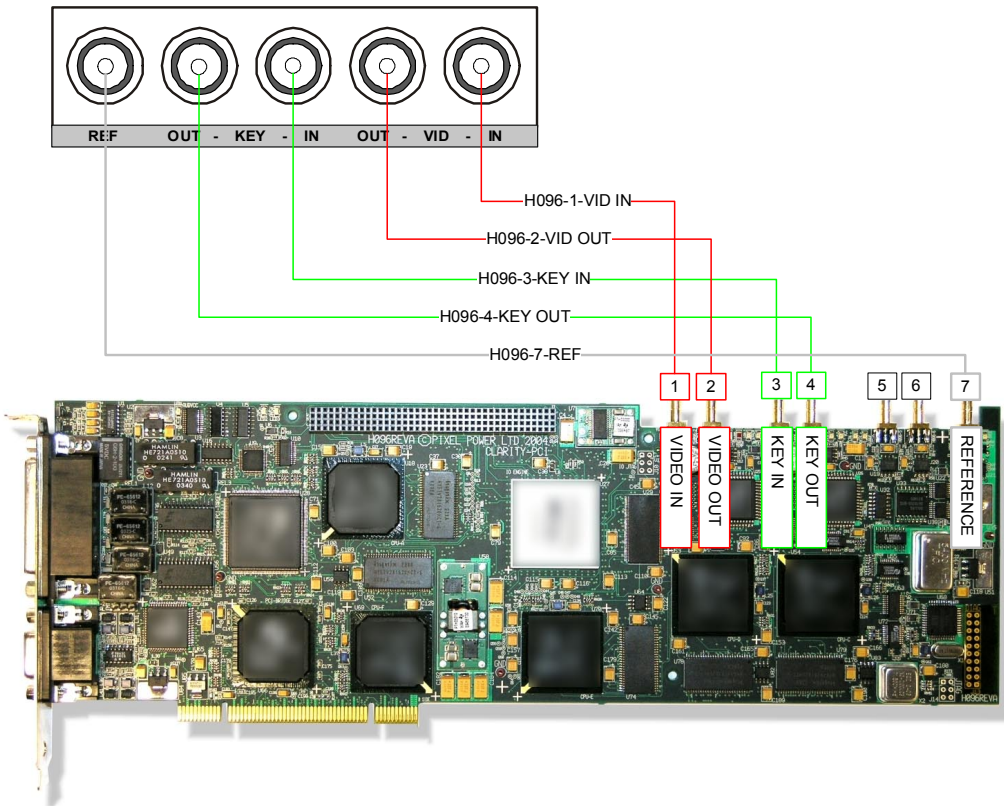
F-183 Clarity 100 STYLE A maintenance procedures

| Procedure | Details |
|---|--|
| Removing and re-fitting the H096 SD Framestore CPU and Input/Output (I/O) PCB | Refer to “21.4.2 Replacing a H096 SD Framestore CPU and Input/Output (I/O) PCB” on page 21.5 for more information. |

21.4.1 H096 SD Framestore CPU and Input/Output (I/O) PCB cable connections

The diagram below shows the internal connections that enable signals to be distributed and received between the Clarity 100 rear panel BNC connectors and the H096 SD Framestore CPU and Input/Output (I/O) PCB. This information is referenced in later procedures.

F-184 H096 SD Framestore CPU and Input/Output (I/O) PCB cable connections



21.4.2 Replacing a H096 SD Framestore CPU and Input/Output (I/O) PCB

21.4.2.1 Notes

This section details the procedure that should be performed when removing and re-fitting the H096 SD Framestore CPU and Input/Output (I/O) PCB into a Clarity 100 STYLE A system unit.

To learn more about the H096 PCB and its location, refer to “[20.2.3 Framestore CPU and Input/Output \(I/O\) \(H096 and H100\)](#)” on page 20.5 for more information.

21.4.2.2 Required tools

The following tools are required:

F-185 Tools required

| Tool | Illustration |
|---------------------|--------------|
| Anti-static surface | N/A |

21.4.2.3 Supplied parts

None.

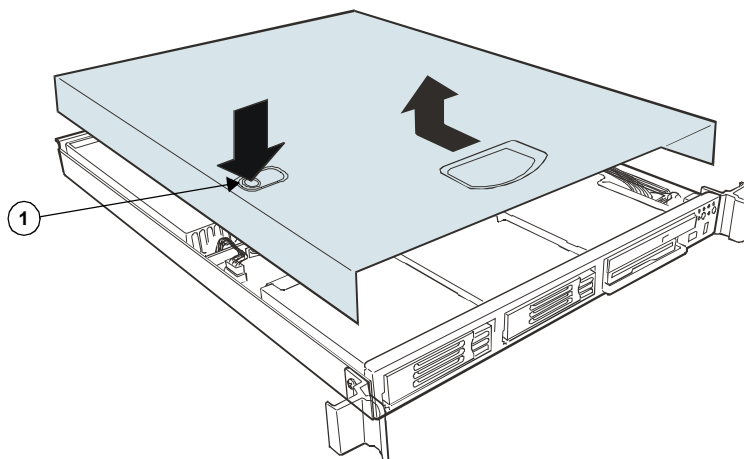
21.4.2.4 System unit preparation

1. Refer to “[21.2.3 Safety steps before working](#)” on page 21.2 for more information.
2. Position the system unit on a clean, level work area.

21.4.2.5 Remove chassis cover

1. While pressing the blue latch button (1) with your left thumb, slide the top cover back using the heel of your right hand on the blue pad.

F-186 Chassis cover removal



A non-skid surface or a stop behind the chassis may be needed if you are attempting to remove the top cover on a flat surface.

2. Set the cover aside and away from the immediate work area.

21. Performing Maintenance and Upgrades [CLARITY]

21.4.2.6 Removing the H096 SD Framestore CPU and Input/Output (I/O) PCB

1. Remove all of the gold MCX video cables from the H096 PCB (A1). Make a note of how the cables are routed in the chassis to aid re-connection.
2. Insert your finger in the plastic loop (B1).
3. Pull straight up and remove the riser card assembly that contains the H096 PCB from the chassis.
4. Open the retainer clip (C1) on the riser card assembly retention bracket, then pull the H096 PCB out of the riser card slot (C2).

21.4.2.7 Re-fitting the H096 SD Framestore CPU and Input/Output (I/O) PCB

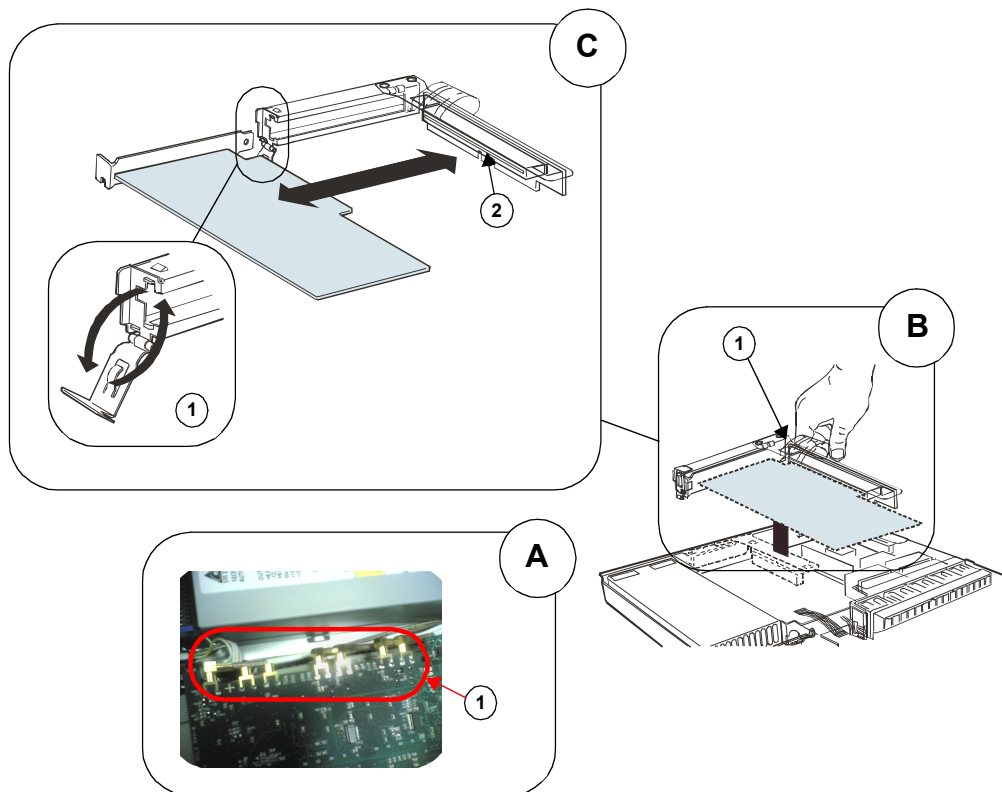
1. Insert the replacement H096 PCB card into the riser card assembly.
2. Firmly push the H096 PCB's edge-connector into the riser card slot until it is fully seated (C2).
3. Close the retaining clip (C1) and ensure it is latched.
4. Insert the riser card assembly connector in the motherboard slot, whilst aligning the tabs on the rear retention bracket with the holes in the system unit chassis.
5. Gently position the riser card assembly into the slot, ensuring that it is NOT inserted at an angle.



Inserting the riser card assembly at an angle may cause damage.

6. Re-fit and route all of the gold MCX video cables into the H096 PCB (B1). Refer to “[21.5.1 Internal cable connections and routing](#)” on page 21.7 for more information.
7. Once positioned, firmly press the riser card straight down until it is seated in the server board slot.
8. Replace the chassis cover if you have no additional work to do inside the chassis.

F-187 H096 PCB removal and re-fitment



21.5 Clarity 200 STYLE A maintenance and upgrades

The following procedures are available:

F-188 Clarity 200 STYLE A maintenance procedures

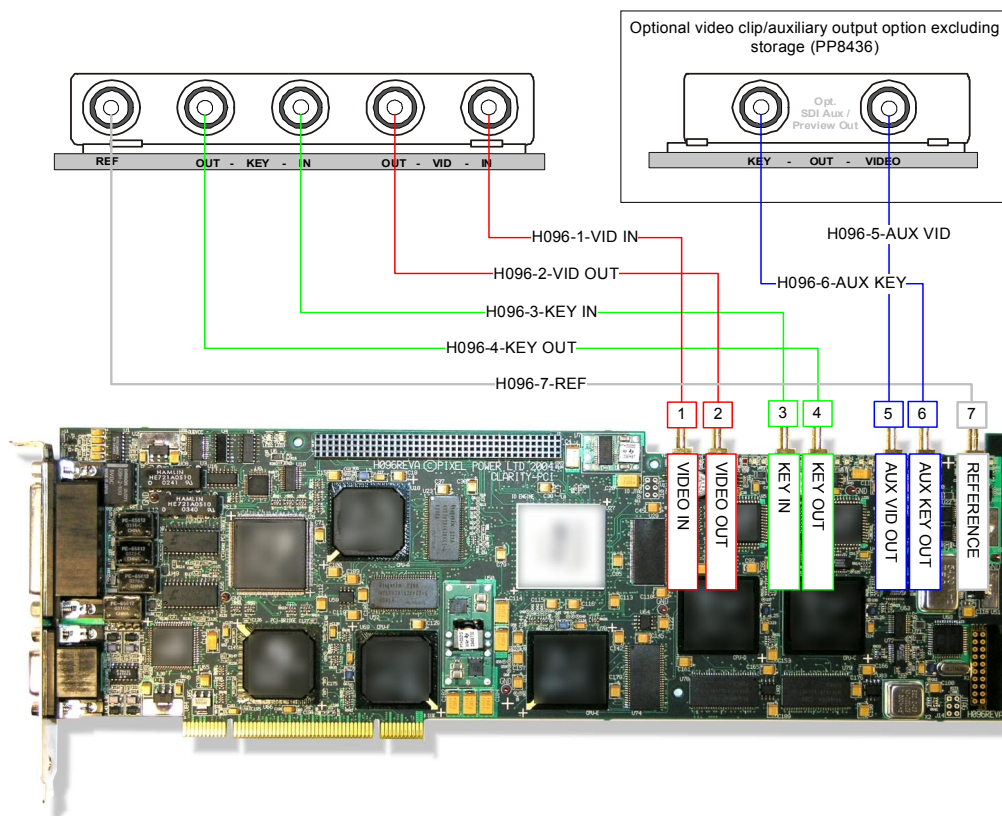
| Procedure | Details |
|---|---|
| Removing and re-fitting the H096 SD Framestore CPU and Input/Output (I/O) PCB | Refer to “21.4.2 Replacing a H096 SD Framestore CPU and Input/Output (I/O) PCB” on page 21.5 for more information. |
| Installing the optional video clip/auxiliary output option excluding storage (PP8436) | Refer to “21.5.3 Installing the optional video clip/auxiliary output option excluding storage (PP8436)” on page 21.11 for more information. |

21.5.1 Internal cable connections and routing

21.5.1.1 H096 SD Framestore CPU and Input/Output (I/O) PCB cable connections

The diagram below shows the internal connections that enable signals to be distributed and received between the Clarity 200 rear panel BNC connectors and the H096 SD Framestore CPU and Input/Output (I/O) PCB. This information is referenced in later procedures.

F-189 H096 SD Framestore CPU and Input/Output (I/O) PCB cable connections

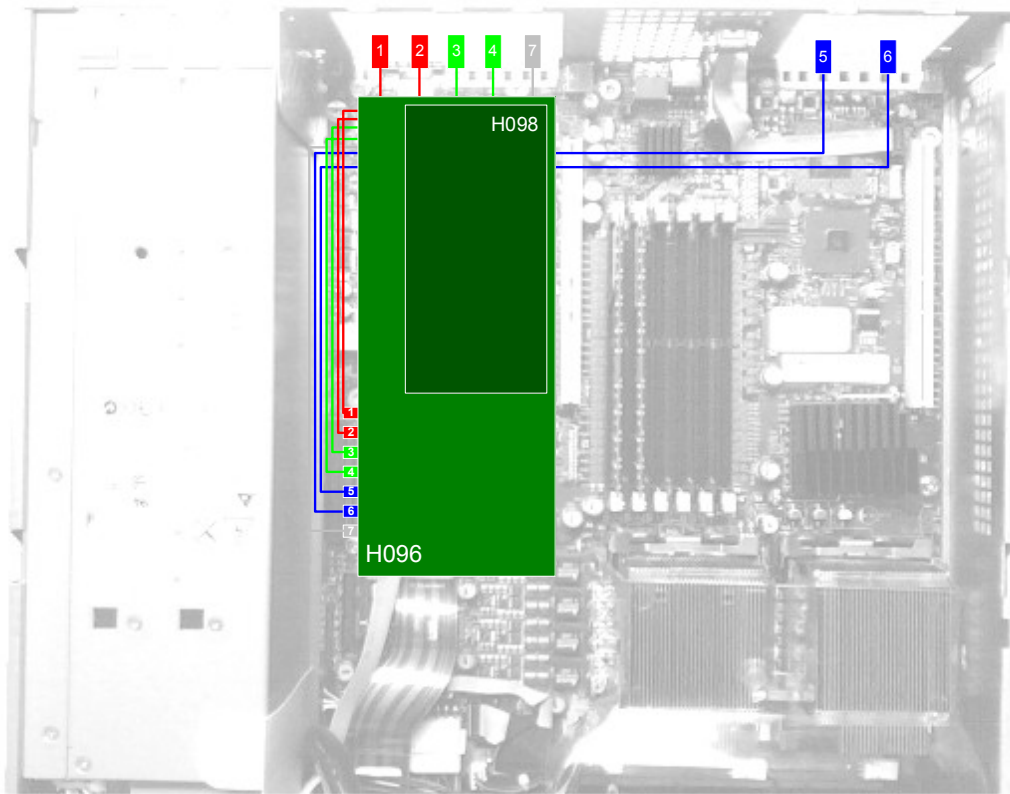


21. Performing Maintenance and Upgrades [CLARITY]

21.5.1.2 Cable routing

The diagram below shows the correct routing of cabling between Clarity 200 rear panel BNC connectors and the H096 SD Framestore CPU and Input/Output (I/O) PCB. Cables must pass underneath the H096 PCB. This information is referenced in later procedures.

F-190 Cable routing



21.5.2 Replacing a H096 SD Framestore CPU and Input/Output (I/O) PCB

21.5.2.1 Notes

This section details the procedure that should be performed when removing and re-fitting the H096 SD Framestore CPU and Input/Output (I/O) PCB into a Clarity 200 STYLE A system unit.

Your system unit may include the optional video clip/auxiliary output option in the form of the Standard Definition (SD) Clip Processing and Input/Output (I/O) (H098) PCB. This PCB plugs directly on to the H096 PCB but is not shown or detailed in subsequent pictures or procedures.

To learn more about the H096 PCB and its location, refer to “[20.2.3 Framestore CPU and Input/Output \(I/O\) \(H096 and H100\)](#)” on page 20.5 for more information. To learn more about the H098 PCB and its location, refer to “[20.2.5 Standard Definition \(SD\) Clip Processing and Input/Output \(I/O\) \(H098\)](#)” on page 20.6 for more information.

21.5.2.2 Required tools

The following tools are required:

F-191 Tools required

| Tool | Illustration |
|---------------------|--------------|
| Anti-static surface | N/A |

21.5.2.3 Supplied parts

None.

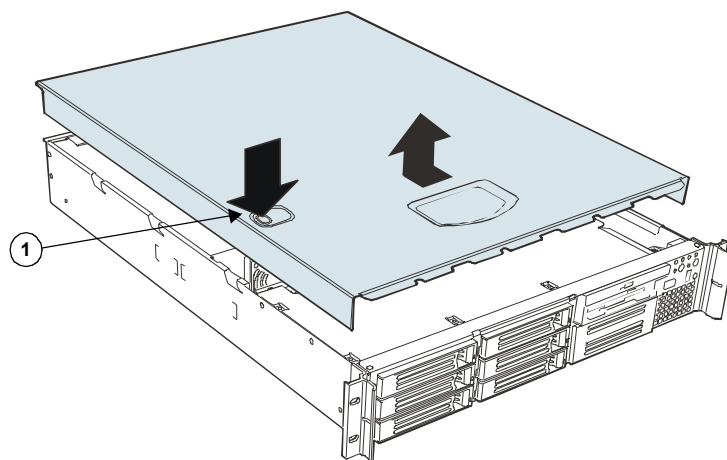
21.5.2.4 System unit preparation

1. Refer to “[21.2.3 Safety steps before working](#)” on page 21.2 for more information.
2. Position the system unit on a clean, level work area.

21.5.2.5 Remove chassis cover

1. While pressing the blue latch button (1) with your left thumb, slide the top cover back using the heel of your right hand on the blue pad.

F-192 Chassis cover removal



A non-skid surface or a stop behind the chassis may be needed if you are attempting to remove the top cover on a flat surface.

21. Performing Maintenance and Upgrades [CLARITY]

2. Set the cover aside and away from the immediate work area.

21.5.2.6 Removing the H096 SD Framestore CPU and Input/Output (I/O) PCB

1. Insert your fingers in plastic loop (A1) and loop (A2) and remove the riser card assembly that contains the H096 PCB from the chassis.
2. Remove all of the gold MCX video cables from the H096 PCB (B1). Make a note of how the cables are routed in the chassis to aid re-connection.
3. Open the retainer clip (C1) on the riser card assembly retention bracket, then pull the H096 PCB out of the riser card slot (C2).
4. Place the H096 PCB on an anti-static surface.

21.5.2.7 Re-fitting the H096 SD Framestore CPU and Input/Output (I/O) PCB

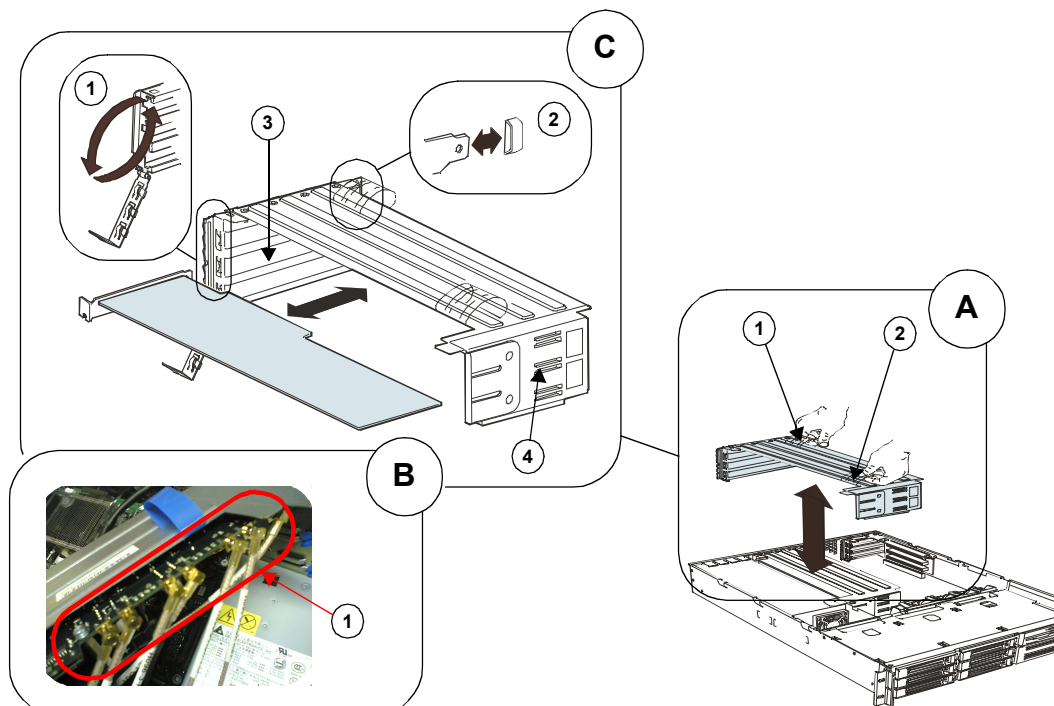
1. Insert the replacement H096 PCB card into the riser card assembly, whilst inserting the end of the PCB's metal bracket into the relevant riser card assembly opening (C3) and the other end into the slots of the riser card assembly card lock (C4).
2. Firmly push the H096 PCB's edge-connector into the riser card slot until it is fully seated (C2).
3. Close the retaining clip (C1) and ensure it is latched.
4. Whilst holding the riser card assembly in close proximity to the chassis, re-fit all of the gold MCX video cables onto the H096 PCB (B1) and route them within the chassis. Refer to [“21.5.1 Internal cable connections and routing”](#) on page 21.7 for more information.
5. Insert the riser card assembly connector in the motherboard slot, whilst aligning the tabs on the rear retention bracket with the holes in the system unit chassis.
6. Gently position the riser card assembly into the slot, ensuring that it is NOT inserted at an angle.



Inserting the riser card assembly at an angle may cause damage.

7. Once positioned, firmly press the riser card straight down until it is seated in the server board slot.
8. Replace the chassis cover if you have no additional work to do inside the chassis.

F-193 H096 PCB removal and re-fitment



21. Performing Maintenance and Upgrades [CLARITY]

21.5.3 Installing the optional video clip/auxiliary output option excluding storage (PP8436)

21.5.3.1 Notes

This section details the procedure that should be performed when installing the optional video clip/auxiliary output option excluding storage (PP8436) into a Clarity 200 STYLE A system unit.

A new PCB is supplied (H098 Standard Definition (SD) Clip Processing and Input/Output (I/O) PCB) along with some ancillary fittings and cables to enable rear panel connectivity. The H098 PCB plugs directly onto the existing H096 PCB.

To learn more about the H096 PCB and its location, refer to “[20.2.3 Framestore CPU and Input/Output \(I/O\) \(H096 and H100\)](#)” on page 20.5 for more information. To learn more about the H098 PCB, refer to “[20.2.5 Standard Definition \(SD\) Clip Processing and Input/Output \(I/O\) \(H098\)](#)” on page 20.6 for more information.

21.5.3.2 Required tools

The following tools are required:

F-194 Tools required

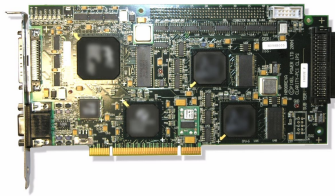


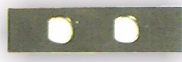

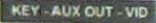
| Tool | Illustration |
|----------------------------|--------------|
| Posidrive No.1 screwdriver | N/A |
| Anti-static surface | N/A |
| 7mm nut driver or spanner | N/A |

21.5.3.3 Supplied parts



Below is a list of supplied parts. Prior to the initiation of the upgrade, please check the parts received against the list. If anything is discovered missing, contact Pixel Power for assistance.

F-195 Parts required

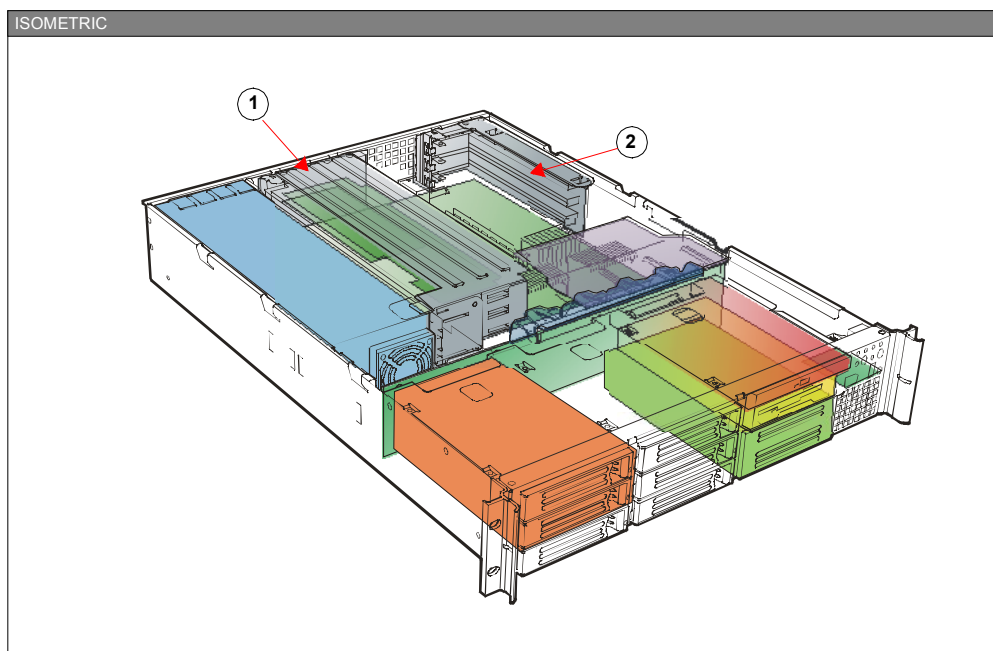
| Quantity | Part | Illustration | | |
|----------|--|--|--|---|
| 1 | H098 PCB |  | | |
| 3 | M3 screw and washer | N/A | | |
| 2 | BNC to MCX video cable with retaining nut attached |  | | |
| 1 | Set of 3 x BNC rear panel mounting plates | A | B | C |
| | |  |  |  |
| 1 | Rear panel BNC identification label |  | | |

21. Performing Maintenance and Upgrades [CLARITY]

21.5.3.4 System component identification

The diagram below shows the parts that are to be removed from the system.

F-196 Clarity 200 system components to be removed



| Part | Description/Procedure |
|------|---|
| 1 | Full length PCI riser bracket and assembly containing the H096 SD Framestore CPU and Input/Output (I/O) PCB |
| 2 | Half length PCI riser bracket and assembly |

21.5.3.5 System unit preparation

1. Refer to [“21.2.3 Safety steps before working”](#) on page 21.2 for more information.
2. Position the system unit on a clean, level work area.

21.5.3.6 Remove chassis cover

To remove the chassis cover, refer to [“21.5.3.6 Remove chassis cover”](#) on page 21.12 for more information.

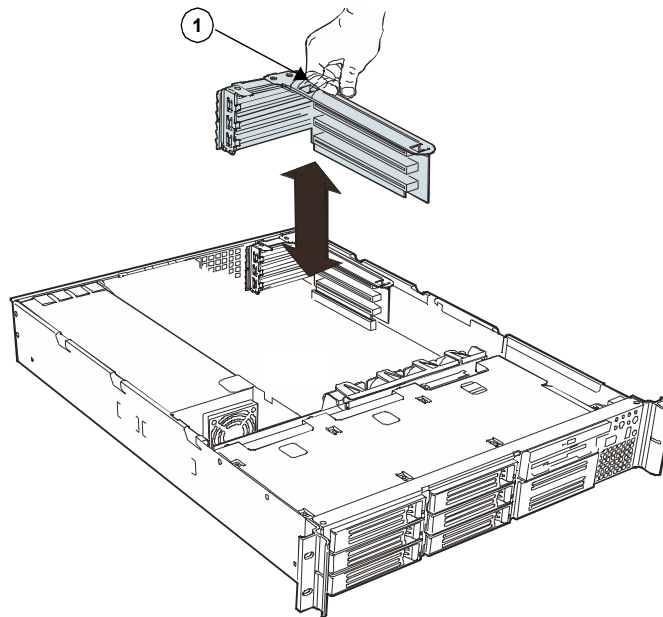
21.5.3.7 Removing the H096 SD Framestore CPU and Input/Output (I/O) PCB

To remove the H096 SD Framestore CPU and Input/Output (I/O) PCB, refer to [“21.5.3.7 Removing the H096 SD Framestore CPU and Input/Output \(I/O\) PCB”](#) on page 21.12 for more information.

21.5.3.8 Removing and re-fitting the half length PCI riser bracket assembly

Insert your fingers into plastic loop (1) and remove the riser card assembly.

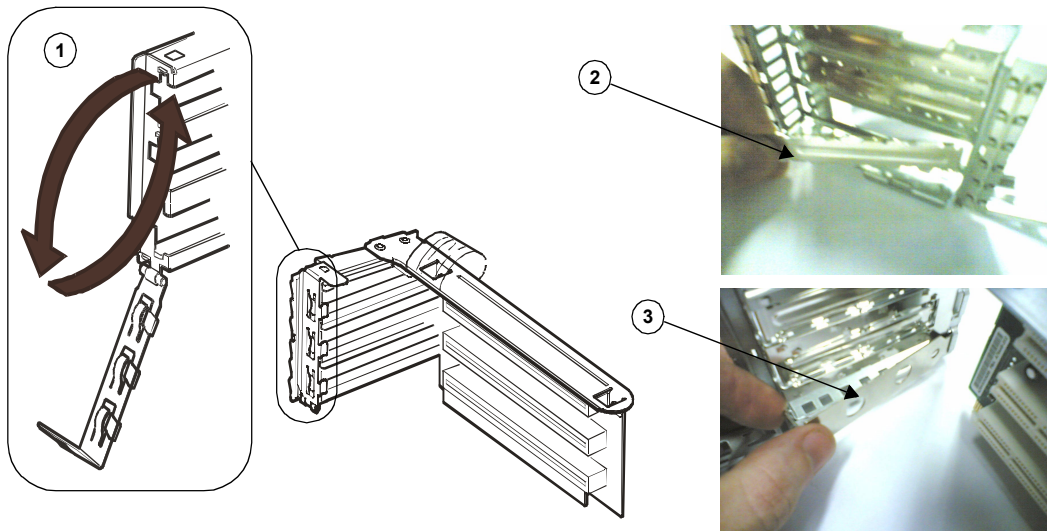
F-197 Half length PCI riser bracket removal



21.5.3.9 Fitting the rear panel mounting plate into the half length PCI riser bracket assembly

1. Open the retainer clip (1) and remove the bottom filler panel (2) from the rear retention bracket of the riser card.
2. Fit (3) the new mounting plate (listed as A in the parts section) and then close the retainer clip (1)

F-198 Rear panel mounting plate fitment into half length PCI riser bracket



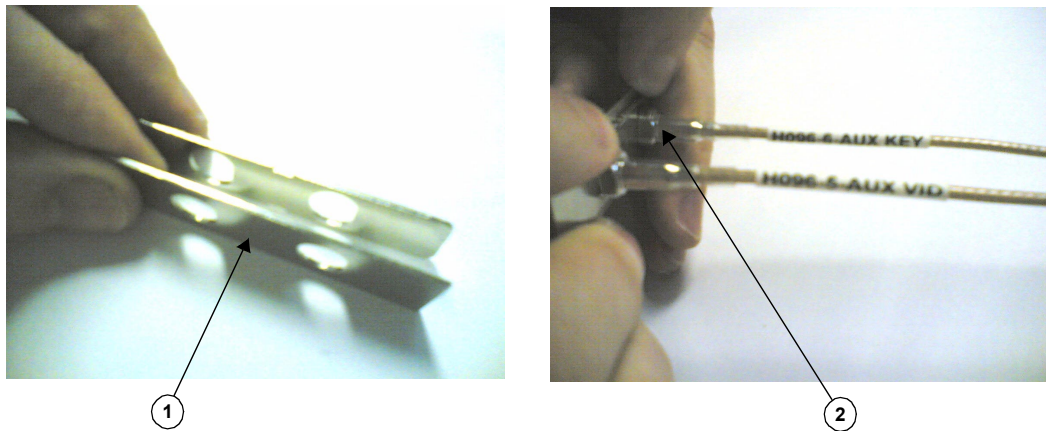
21.5.3.10 Assembling the rear panel BNC assembly

1. Position the two flat mounting plates together (1), the larger one (listed as B in the parts section) in front of the smaller one (listed as C in the parts section).
2. Remove the retaining nuts from each BNC and slide them off the end of each cable.
3. Thread the gold BNC to MCX video cables through the mounting plates holes so that each BNC

21. Performing Maintenance and Upgrades [CLARITY]

mounts flush against the larger mounting plate. The **H096-6-AUX KEY** cable should pass through the furthest left hole (2).

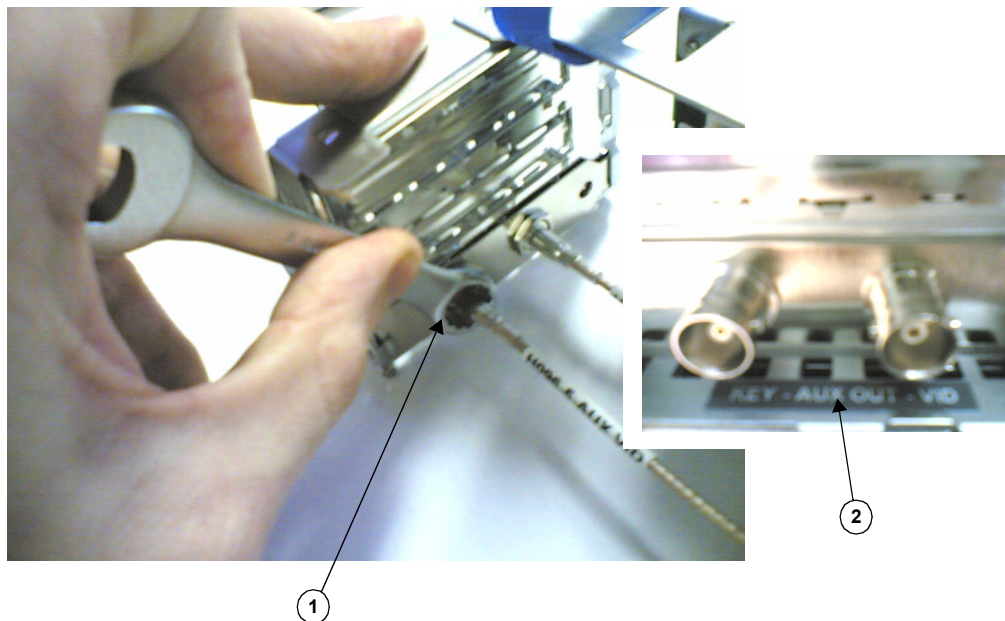
F-199 Rear panel BNC assembly



21.5.3.11 Fitting the rear panel BNC assembly to the half length PCI riser bracket assembly

1. Position the BNC rear panel assembly over the rear panel mounting plate (listed as A in the parts section) and push the BNC connectors through, ensuring a flush fitment. A small amount of screw thread on each BNC should be visible.
2. Slide the retaining nuts back down the BNC to MCX video cables and secure each BNC to the mounting plate using an 7mm nut spinner or spanner (1).

F-200 Rear panel BNC assembly fitment to half length PCI riser bracket



3. Stick the rear panel BNC identification label onto the flat recess below the BNC sockets (2).

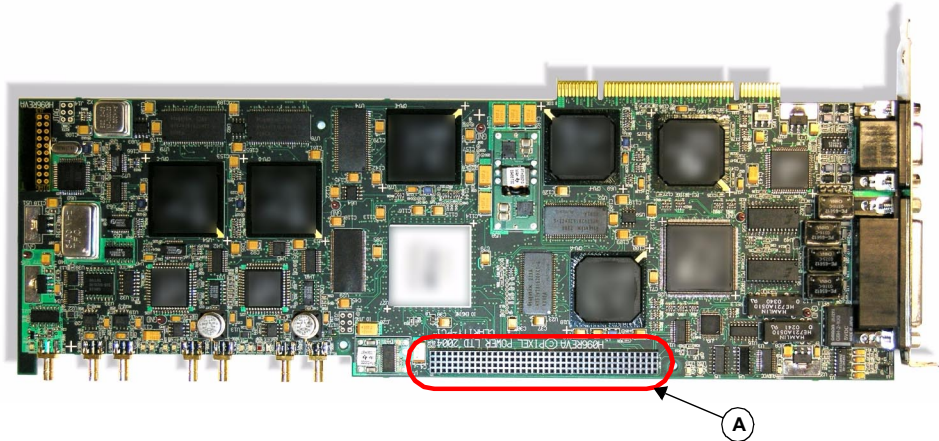
21.5.3.12 Re-fitting the half length PCI riser bracket and assembly

Re-fitting the half length PCI riser bracket and assembly is the reverse of removal. Refer to [“21.5.3.8 Removing and re-fitting the half length PCI riser bracket assembly”](#) on page 21.13 for more information.

21.5.3.13 Fitting the H098 Standard Definition (SD) Clip Processing and Input/Output (I/O) PCB

1. Place the H096 PCB on an anti-static surface with the PCB components face up, as shown below. Take note of connector block (A) into which the H098 PCB will be connected.

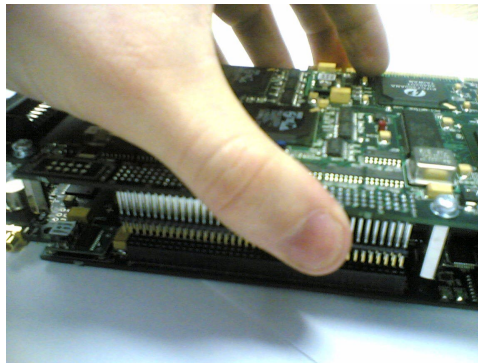
F-201 H096 connector block used for connecting the optional H098 PCB



2. Position the H098 PCB on top of the H096 PCB with the D-type connectors on both PCB's at the same end, then gently push the connectors on the H098 PCB into the connector block on the H096 PCB.

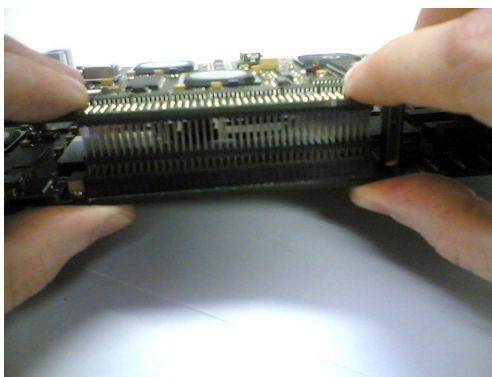
DO NOT not seat the H098 PCB fully (see next step).

F-202 H098 PCB positioning and initial seating



3. To seat the H098 PCB fully and avoid damage to the H096 PCB, tilt the PCB assembly at an angle and then use the thumb and forefinger of both hands to apply even pressure, thus seating the H098 PCB firmly.

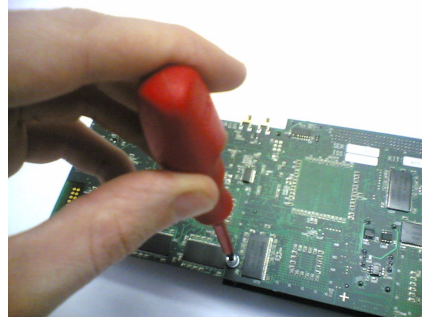
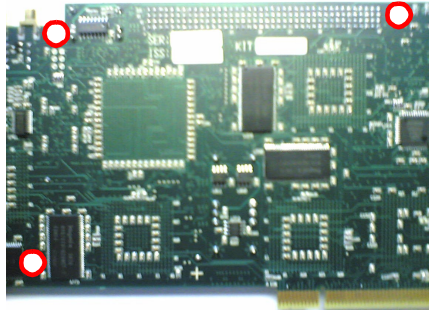
F-203 Seating the H098 PCB fully



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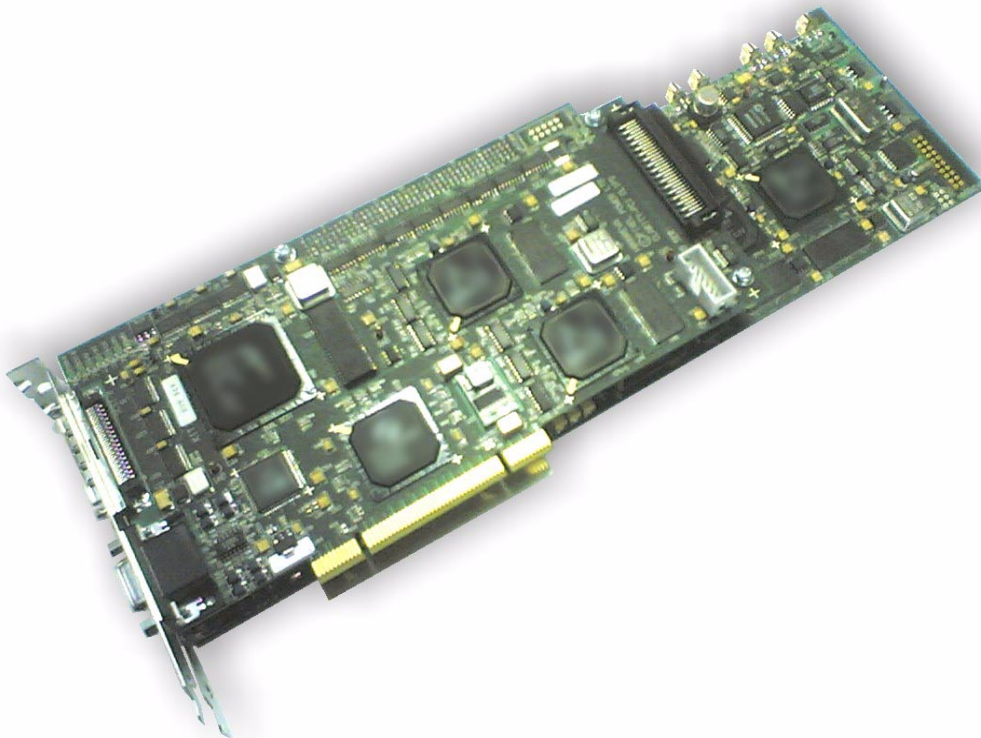
4. With the H098 PCB seated, turn the PCB assembly over to reveal the three securing screw holes.
5. Fit the supplied M3 screws and washers to secure the PCB assembly together.

F-204 H098 PCB securing holes and M3 screw fitment



The complete PCB assembly is shown below.

F-205 H096 + H098 PCB completed assembly



21.5.3.14 Re-fitting the H096 + H098 PCB assembly and connecting new auxiliary video cables

Refer to [“21.5.2.7 Re-fitting the H096 SD Framestore CPU and Input/Output \(I/O\) PCB”](#) on page 21.10 for more information.

When re-fitting the H096 + H098 PCB assembly, in addition to the existing video cable connections, you will have to connect the two new auxiliary cables to the AUX MCX connectors on the H096 PCB. Refer to [“21.5.1.1 H096 SD Framestore CPU and Input/Output \(I/O\) PCB cable connections”](#) on page 21.7 for more information. The connectors are listed as 5 and 6 and are shown in blue.

The new cables should be routed carefully within the chassis so that they pass underneath the H096 + H098 PCB assembly. Refer to [“21.5.1.2 Cable routing”](#) on page 21.8 for more information.

21. Performing Maintenance and Upgrades [CLARITY]

21.6 Clarity 300 STYLE A maintenance and upgrades

The following procedures are available:

F-206 Clarity 200 STYLE A maintenance procedures

| Procedure | Details |
|---|--|
| Removing and re-fitting the supplied USB dongle | Refer to “ 21.6.1 Removing and re-fitting an internal USB dongle ” on page 21.19 for more information. |
| H097 RS422/RS232 jumper configuration Configuration of the 9-pin standard density female D-type connector on the optional H097 Serial/GPI/GPO Status Monitor PCB that can be used either as an RS422 port for VTR/machine control or as an RS232 serial port. | Refer to “ 21.9.1 H087/H097 RS422/RS232 jumper configuration ” on page 21.31 for more information. |

21.6.1 Removing and re-fitting an internal USB dongle

21.6.1.1 Notes

On Clarity 300 and Clarity 3000 systems, the USB dongle is pre-installed inside the system chassis during production. This reduces the possibility of the dongle being lost or damaged during transit and when installed in a customer location (e.g. rack or outside broadcast vehicle.)

This section details the procedure that should be performed when removing and re-fitting the supplied USB dongle.

21.6.1.2 Required tools

The following tools are required:

F-207 Tools required

| Tool | Illustration |
|----------------------------|--------------|
| Anti-static surface | N/A |
| Posidrive No.1 screwdriver | N/A |
| Scissors | N/A |

21.6.1.3 Supplied parts

None.

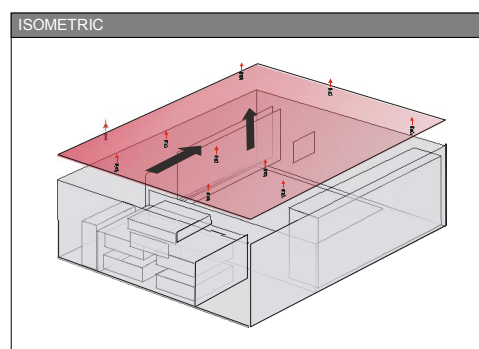
21.6.1.4 System unit preparation

1. Refer to “[21.2.3 Safety steps before working](#)” on page 21.2 for more information.
2. Position the system unit on a clean, level work area.

21.6.1.5 Remove chassis cover

1. Using a Posidrive No.1 screwdriver, remove the 10 screws that secure the cover.
2. Slide the cover back from the front of the chassis, then lift the cover away from the chassis.

F-208 Chassis cover removal



Keep the screws and chassis cover together.

21. Performing Maintenance and Upgrades [CLARITY]

21.6.1.6 Identify internal USB socket location and remove USB dongle

The internal USB sockets is located at the front of the chassis and is mounted on the internal 3.5" floppy drive chassis, as shown in the picture below. During production, to ensure that the dongle does not become loose and possibly cause damage, the dongle is secured to the internal USB socket using a cable tie. To remove the dongle, cut the cable tie, then pull dongle out from the USB socket.

F-209 Clarity 300 and Clarity 3000 internal USB socket location



21.6.1.7 Re-fitting the dongle and chassis cover

Re-fitting the USB dongle and chassis cover is the reverse of removal.



If you intend on moving the system to another location or think that a situation may arise where the unit will be subjected to physical shock, we recommend that you refit a new cable tie to secure the USB dongle in place.

21.7 Clarity 3000 STYLE A maintenance and upgrades

The following procedures are available:

F-210 Clarity 3000 STYLE A maintenance procedures

| Procedure | Details |
|---|--|
| Removing and re-fitting the supplied USB dongle | Refer to “ 21.6.1 Removing and re-fitting an internal USB dongle ” on page 21.19 for more information. |
| H097 RS422/RS232 jumper configuration Configuration of the 9-pin standard density female D-type connector on the standard H097 Serial/GPI/GPO Status Monitor PCB that can be used either as an RS422 port for VTR/machine control or as an RS232 serial port. | Refer to “ 21.9.1 H087/H097 RS422/RS232 jumper configuration ” on page 21.31 for more information. |

21.8 Clarity STYLE A maintenance and upgrades

[LEGACY]

The following procedures are available:

F-211 Clarity STYLE A maintenance procedures

| Procedure | Details |
|---|---|
| Audio upgrade Installation of the audio option to a Clarity system with the STYLE A rear panel. | Refer to “ 21.8.1 Audio upgrade ” on page 21.23 for more information. |

21. Performing Maintenance and Upgrades [CLARITY]

21.8.1 Audio upgrade

21.8.1.1 Notes

The following document describes the procedures for installation of the audio option to a Clarity system with the STYLE A rear panel.




The Clarity systems contain PCB components, which are sensitive to ESD damage. Anti-static precautions should be taken when accessing areas near internal system boards.

21.8.1.2 Required tools

The following tools are required:

F-212 Tools required for audio upgrade

| Tool | Illustration |
|--------------------------------------|--|
| Medium tip Phillips head screwdriver | N/A |
| 7mm nut driver | N/A |
| 5mm nut driver | N/A |
| CG Tools V.5.n.n.n series CD | N/A |
| Anti-static surface | N/A |
| Board Extraction tool |  |

21.8.1.3 Supplied parts



Below is a list of supplied parts. Prior to the initiation of the upgrade, please check the parts received against the list. If anything is discovered missing, contact Pixel Power for assistance.

F-213 Parts required for audio upgrade

| Quantity | Part |
|----------|--|
| 2 | H087B PCB |
| 2 | H087B ribbon cable |
| 1 | H088B PCB |
| 1 | H089B PCB |
| 1 | 68-pin SCSI connector w/mounting brace and ribbon cable (if not already on system) |
| 1 | Replacement back metal work |
| 1 | H072 PIC v1.9 or later |

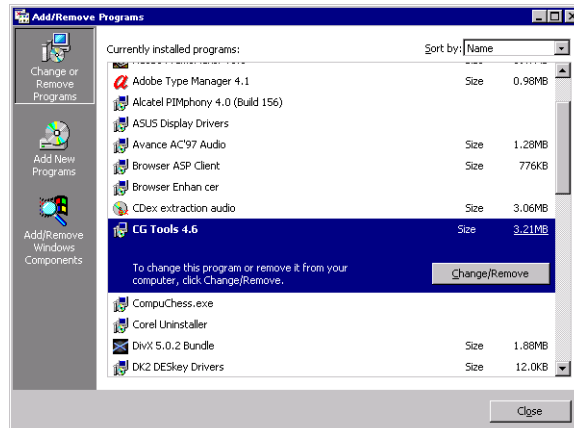
For more information on identifying PCB's, refer to [“20. Inside a System Unit \[CLARITY\]”](#) on page 20.1 for more information.

21. Performing Maintenance and Upgrades [CLARITY]

21.8.1.4 Un-installing existing CG Tools software

If you have any old versions of Clarity or Clarity PREP on the machine, it is highly recommended that you un-install all of them before proceeding with the installation. To un-install all previous versions, follow the steps below:

1. Select **Start>Settings>Control Panel**. The **Control Panel** is displayed.
2. Select **Add/Remove Programs** from the **Control Panel**. The **Add Remove Programs** dialog box is displayed.



3. From within the **Add/Remove Programs** dialog box, select the first CG Tools, Collette or Clarity entry from the list of installed programs, then select **Change/Remove**.
4. From the resulting install shield dialog box, select **Remove** and then **Next**. The un-installation starts.

When the un-installation is complete DO NOT re-boot until:

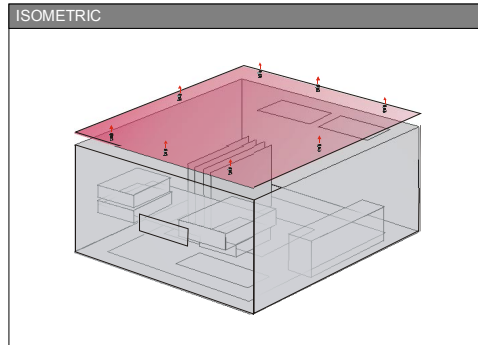
- a) you have checked that there are no other versions of the software installed. If there are, repeat the above process for those versions of software.
- b) there are no versions of any DK2 software products (i.e **DK2 DESKey Drivers**) installed. If there are, repeat the un-install process for these software products, ignoring any errors received during un-install process.

Once all the programs have been removed, you should re-boot your machine.

21.8.1.5 System unit preparation

1. Refer to “21.2.3 Safety steps before working” on page 21.2 for more information.
2. Position the system unit on a clean, level work area.
3. Using a Posidrive No.1 screwdriver, remove the 8 screws that secure the cover.

F-214 Chassis cover removal

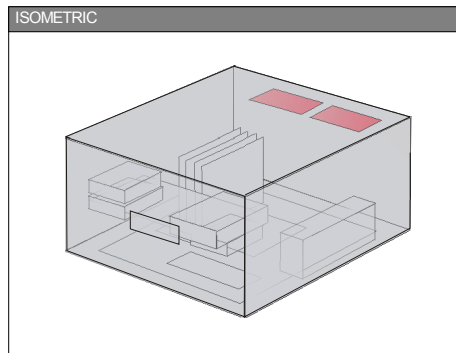


Keep the screws and chassis cover together.

21.8.1.6 H079 Rear Panel (SD) PCB removal

1. Identify the H079B PCB's.

F-215 H079 Rear Panel (SD) PCB identification within chassis



2. Remove the ribbon cables that connect the H079B PCB(s) to the H075B PCB.
3. Remove the H079B PCB's using the 5mm nut driver to remove the standoff bolts on the rear panel, which hold the PCB's in position.

F-216 H079 rear panel standoff bolts



Position the removed PCB's on a safe, anti-static surface.

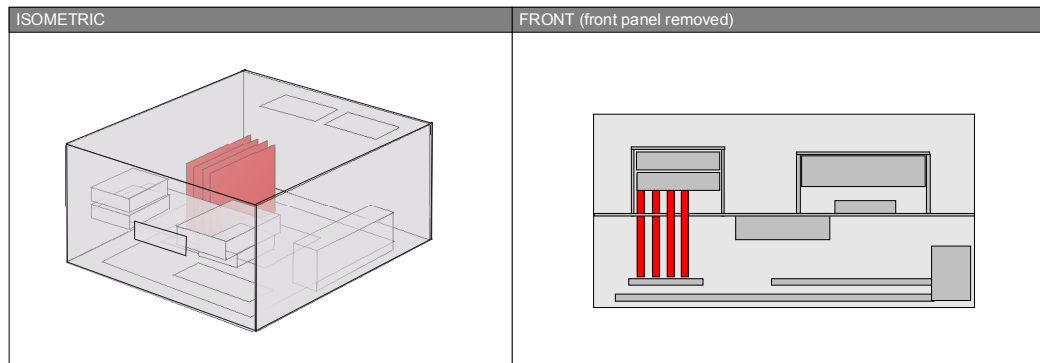
21. Performing Maintenance and Upgrades [CLARITY]

21.8.1.7 H059 and H075 PCB removal

Follow the steps below to remove the existing PCB's which are attached to the Signal Distribution (Video Backplane PCB) (H070). These cards are designated as H059B and H075B.

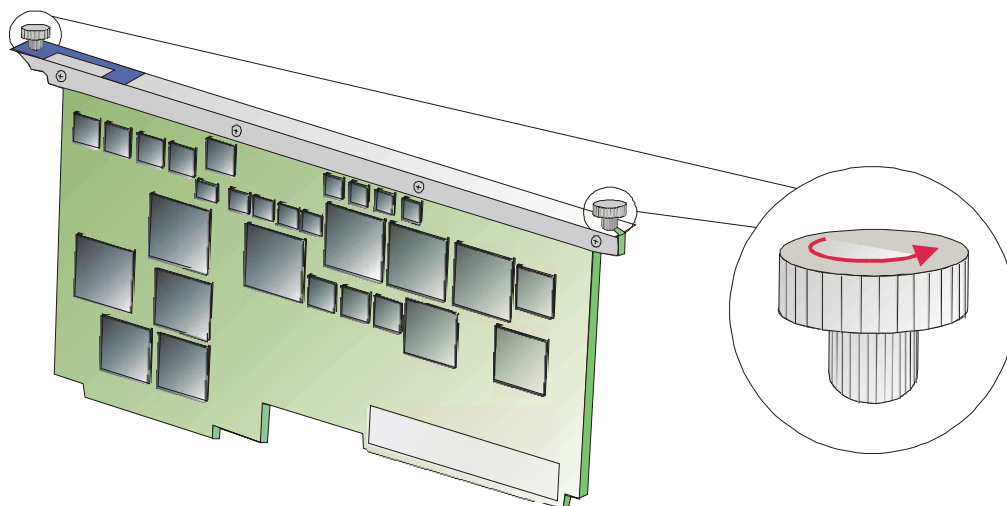
1. Identify the H059B and H075B PCB's.

F-217 H059 and H075 PCB identification within chassis



2. Twist the spring screws on each corner of the cards counter-clockwise until they are completely backed out.

F-218 H059 and H075 spring screw rotation



3. Gently pull up on the corner of each PCB until it clears the PCI and H070 Video Backplane PCB sockets.

Take extreme care not to damage the cards against anything while removing!

4. Position the removed PCB's on a safe, anti-static surface.

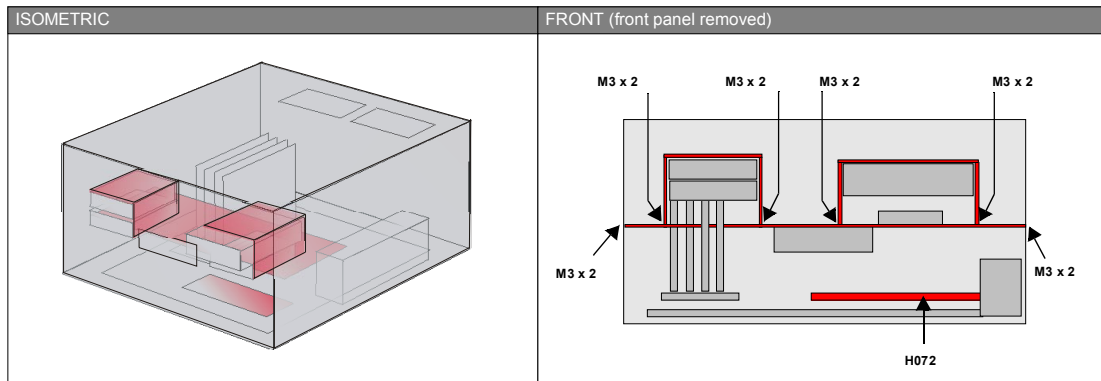
21. Performing Maintenance and Upgrades [CLARITY]

21.8.1.8 Installation of H072 PIC 1.9 or later

Follow the steps below to install the H072 PIC 1.9 or later.

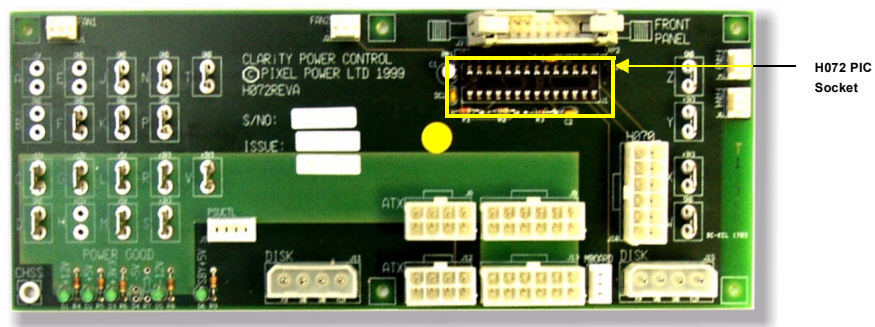
1. Identify the H072 PCB, drive housings and drive shelf.

F-219 H072 PCB, drive housings and drive shelf identification within chassis



2. Remove the power and ribbon cabling from the back of the hard disk, ZIP, CD-ROM and floppy drives.
3. Remove the 4 phillips M3 screws that secure each drive cage to the drive shelf.
Position the removed drive housings in a safe place.
4. Remove the 4 exterior M3 screws that secure the drive shelf to the chassis.
At this point you should be able to manoeuvre the drive shelf out of the way to expose the socket for the H072 PIC.

F-220 H072 PIC location on H072 PCB



5. Remove the existing PIC from the H072 PCB and replace with version 1.9 or later.
6. Replace the drive shelf and both drive cages.
7. Attach all ribbons and power cables back to the drives.

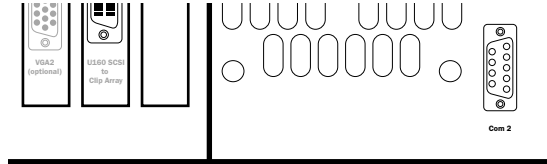
21. Performing Maintenance and Upgrades [CLARITY]

21.8.1.9 Replacing the chassis rear panel metal work

Follow the steps below to replace the rear panel metal work.

1. Locate and remove any devices installed on PCI slots. If your system was configured with the clips playback option, you will have a SCSI connector attached to one of the PCI slot windows. If so, remove and set off to the side.

2. Using the 5mm nut driver, disconnect the D-type male **COM 2** connector (located on the right side of the rear panel as you are facing the back of the unit) by removing the standoff bolts.



3. Locate and disconnect the 4 cooling fan power leads from the motherboard.
4. Locate and disconnect the switch housing ground line from the chassis using the 7mm nut driver tool.
5. Remove the 9 Phillips head screws from the bottom of the metal work, back edge, and then remove the 4 Phillips head screws located on each side of the frame.

You should now be able to gently remove the rear metal work from the frame.

6. Remove the peripheral plate located near the bottom of the metal work and install it onto the replacement panel.
7. Remove the switch housing ground line and also install it on the replacement panel switch housing. Set the removed panel off to the side.
8. Line up the replacement rear panel to the chassis, taking care not to crimp or destroy the ground flanges that are on the outside edge of the rear panel. Once the panel has been aligned correctly, secure with the removed Philips head screws.
9. Attach the switch housing ground line to the chassis frame where it was first removed.

21.8.1.10 Replacement PCB re-fitting

Follow the steps below to re-fit the replacement H087B, H088B and H089B PCB's:

1. Locate and install the H087B Rear Panel (SD) PCB's on the rear panel.
2. Install the H088B and H089B cards into the back plane into the Signal Distribution (Video Backplane PCB) (H070).

The H089B PCB should be inserted into the **IO0** slot and the H088 PCB should be inserted into the **CPU0** slot.

3. Remove any protective wrapping from the rear panel BNC lines.
Each BNC line is numbered and has a corresponding connection point on the H089B PCB.
4. Attach each BNC line to its corresponding socket on the H089B PCB.
5. Replace any items that were removed from the PCI slots such as the video card, etc.
6. Re-fit the D-type male **COM 2** connector in the same location on the new rear panel.
Re-fit the SCSI connector if it was removed from the old rear panel PCI slot window. Attach its ribbon cable to the **BUS 0** socket of the H088B PCB.
7. Attach the two news ribbon cables provided with the upgrade kit onto the H087B and H088B PCB's.

21.8.1.11 Completion

Follow the steps below to complete the audio upgrade.

1. Re-fit the chassis lid and then reconnect any peripherals that were removed (mouse, keyboard, and monitor etc.).
2. Reconnect the power cable to the system unit.
3. Power-up the system unit.
4. During the Microsoft Windows booting sequence, some hardware alert messages may be encountered. Select **Cancel** when confronted by these messages.
5. Install CG Tools by inserting the CD-ROM into the CD-ROM drive and allow auto play to start the installation.
6. Follow the instructions supplied with the CD-ROM. Refer to “[13.4 CG Tools software installation](#)” on page 13.6 for more information.

During the installation, you will come to a dialog box enabling the selection of which type of Clarity software to install on the system. Refer to “[13.4.2 What type of Clarity system do I have? \[CLARITY\]](#)” on page 13.6 for more information.

7. Re-boot the Clarity system unit after the installation and test the audio and clip functions.

The removed H079 and H075 cards are to be returned to Pixel Power Ltd. according our instructions.

21. Performing Maintenance and Upgrades [CLARITY]

21.9 Clarity 2 STYLE B and C and Clarity 500 STYLE A, B and C maintenance and upgrades

The following procedures are available:

F-221 Clarity 2 STYLE B and C and Clarity 500 STYLE A, B and C maintenance procedures

| Procedure | Details |
|---|--|
| H087/H097 RS422/RS232 jumper configuration Configuration of the 9-pin standard density female D-type connector that can be used either as an RS422 port for VTR/machine control or as an RS232 serial port. | Refer to “21.9.1 H087/H097 RS422/RS232 jumper configuration” on page 21.31 for more information. |
| Installing Clarity H091 LTC Reader PCB Installation of the H091 LTC PCB onto Clarity SD systems that utilise the H089 I/O PCB. | Refer to “21.9.2 Installing Clarity H091 LTC Reader PCB” on page 21.35 for more information. |

21. Performing Maintenance and Upgrades [CLARITY]

21.9.1 H087/H097 RS422/RS232 jumper configuration

21.9.1.1 Notes

This section details the procedure that should be performed when changing:

- a) the 9-pin standard density female D-type connector (**SERIAL**) (**VTR**) between RS422 and RS232 configurations on the H087 Rear Panel (SD) PCB;
- a) the 9-pin standard density female D-type connector (**SERIAL**) between RS422 and RS232 configurations on the H097 Serial/GPI/GPO Status Monitor PCB.

The connector can be used either as an RS422 port for VTR/machine control or as an RS232 serial port.

By default, the connector is set to RS422 operation (Link 1-2). This can be changed to RS232 (Link 2-3) operation by moving a jumper.



The Clarity systems contain PCB components, which are sensitive to ESD damage. Anti-static precautions should be taken when accessing areas near internal system boards.

To learn more about the 9-pin standard density female D-type connector (**SERIAL**) (**VTR**) on the H087 Rear Panel (SD) PCB, refer to [“4.13.4.4 9-pin standard density \(SD\) D-type female connector \(RS232/RS422/Status Monitor\)”](#) on page 4.72 for more information.

To learn more about the 9-pin standard density female D-type connector (**SERIAL**) on the H097 Serial/GPI/GPO Status Monitor PCB, refer to [“4.13.4.4 9-pin standard density \(SD\) D-type female connector \(RS232/RS422/Status Monitor\)”](#) on page 4.72 for more information.

21.9.1.2 Required tools

The following tools are required:

F-222 Tools required

| Tool | Illustration |
|------------------|--------------|
| Long nose pliers | N/A |

21.9.1.3 Supplied parts

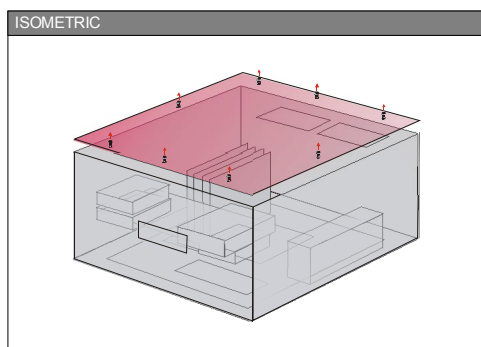
None.

21. Performing Maintenance and Upgrades [CLARITY]

21.9.1.4 System unit preparation

1. Refer to “[21.2.3 Safety steps before working](#)” on page 21.2 for more information.
2. Position the system unit on a clean, level work area.
3. Using a Posidrive No.1 screwdriver, remove the 8 screws that secure the cover.

F-223 Chassis cover removal

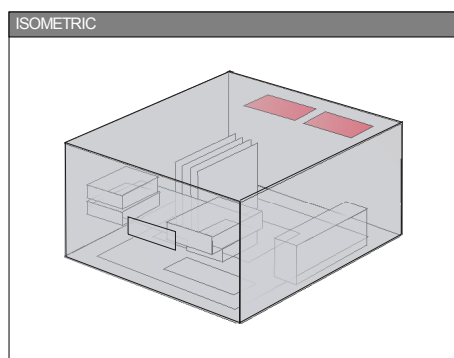


Keep the screws and chassis cover together.

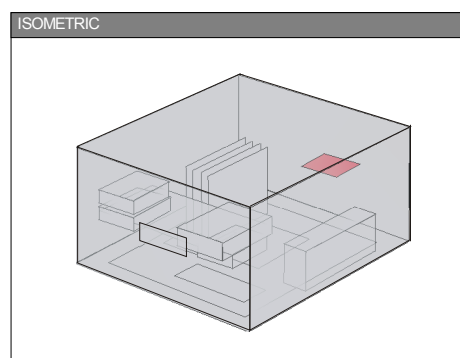
21.9.1.5 H087 and H097 PCB identification

1. Identify the relevant PCB.

F-224 H087 and H097 PCB identification within chassis



H087



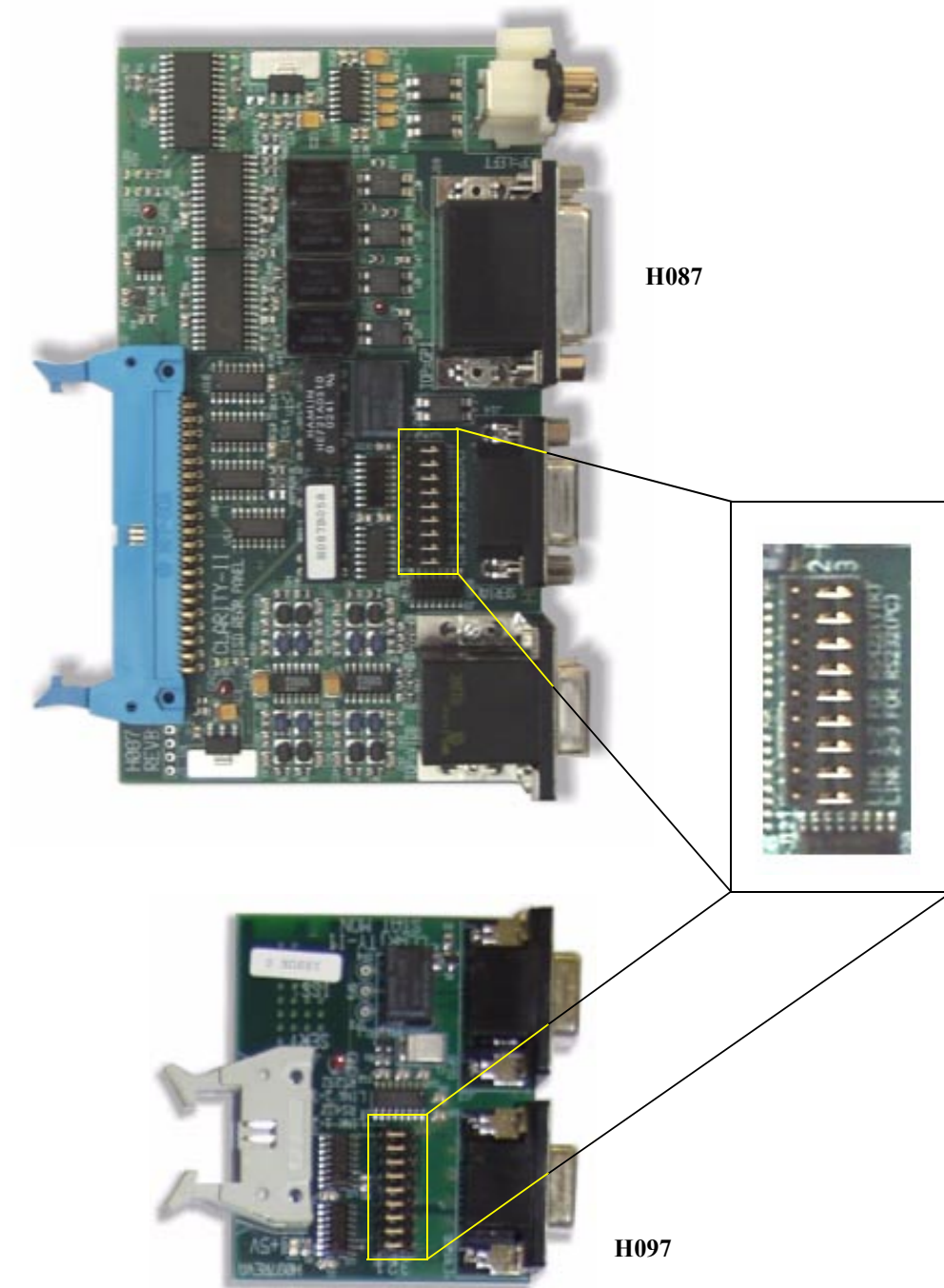
H097

21. Performing Maintenance and Upgrades [CLARITY]

21.9.1.6 Moving the jumper to the RS232 location (Link 2-3)

1. Identify the jumper on the relevant PCB.

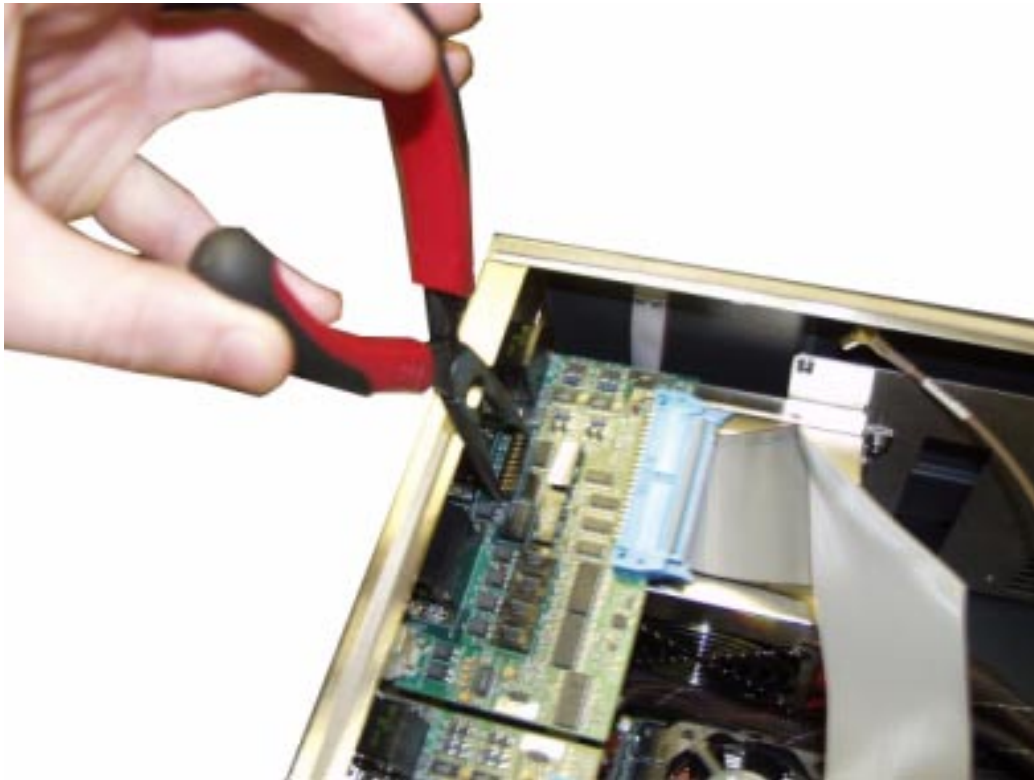
F-225 H087 and H097 PCB RS422/RS232 jumper identification



21. Performing Maintenance and Upgrades [CLARITY]

2. Remove the jumper from the PCB using long nose pliers.

F-226 H087 Rear Panel (SD) PCB RS422/RS232 jumper removal



3. Replace the jumper in the new position (Link 2-3)

21.9.1.7 Re-fitting the chassis cover

1. Replace the chassis cover and then, using the Posidrive No.1 screwdriver, replace the 8 screws that secure the cover to the chassis.

21.9.2 Installing Clarity H091 LTC Reader PCB

21.9.2.1 Notes

This sections details the procedure that should be performed when installing the H091 LTC PCB onto Clarity SD systems that utilise the H089 I/O PCB.



Do not remove the H091 LTC Reader PCB from its protective packaging until its required in the installation procedure.




The Clarity systems contain PCB components, which are sensitive to ESD damage. Anti-static precautions should be taken when accessing areas near internal system boards.

21.9.2.2 Required tools

The following tools are required:

F-227 Tools required


| Tool | Illustration |
|----------------------------|--|
| Posidrive No.1 screwdriver | N/A |
| Anti-static surface | N/A |
| Board Extraction tool |  |

21.9.2.3 Supplied parts



Below is a list of supplied parts. Prior to the initiation of the upgrade, please check the parts received against the list. If anything is discovered missing, contact Pixel Power for assistance.

F-228 Parts required

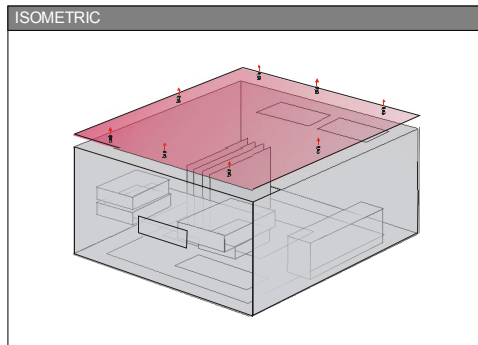
| Quantity | Part | Illustration |
|----------|----------|---|
| 1 | H091 PCB |  |

21. Performing Maintenance and Upgrades [CLARITY]

21.9.2.4 System unit preparation

1. Refer to “21.2.3 Safety steps before working” on page 21.2 for more information.
2. Position the system unit on a clean, level work area.
2. Using a Posidrive No.1 screwdriver, remove the 8 screws that secure the cover.

F-229 Chassis cover removal



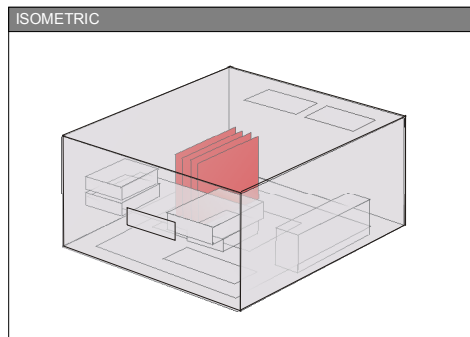
Keep the screws and chassis cover together.

21.9.2.5 H089 I/O PCB removal

Follow the steps below to remove the H089 I/O PCB which is attached to the Signal Distribution (Video Backplane PCB) (H070/H094).

1. Identify the H089 I/O PCB. It is clearly marked with an "H089 SD/IO" blue label.

F-230 I/O and CPU PCB identification within chassis



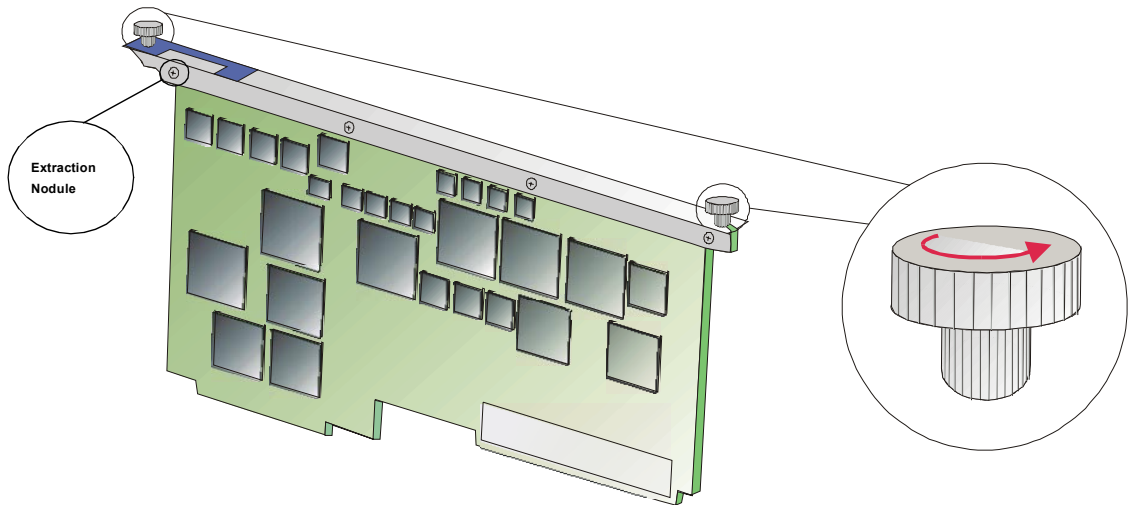
F-231 H089 I/O PCB identification label



2. Twist the spring screws at each end of the PCB counter-clockwise until the PCB is released from the chassis.

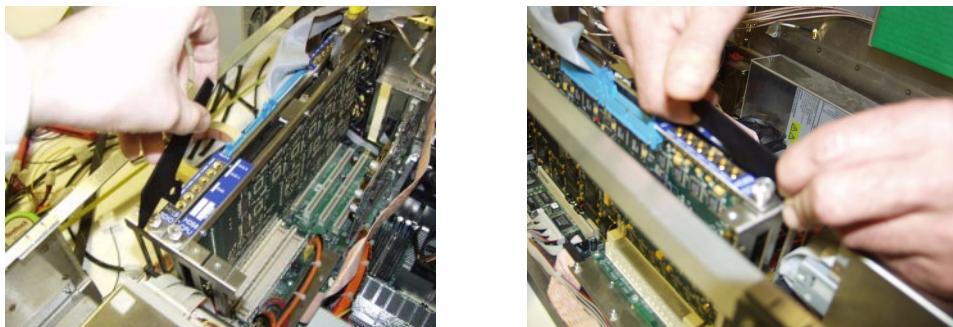
21. Performing Maintenance and Upgrades [CLARITY]

F-232 H089 I/O PCB spring screw rotation and extraction nodule



3. Remove all connecting cabling from the top of the H089 I/O PCB.
4. Using the supplied board extraction tool, prise out the front end of the PCB from the Signal Distribution (Video Backplane PCB) (H070/H094).

F-233 H089 I/O PCB extraction



5. Gently pull up on each end of the PCB until it clears the PCI (rear) and H070 Video Backplane PCB (front) sockets.

IMPORTANT - Take care not to knock the PCB against adjacent PCB's whilst removing!

6. Position the removed H089 I/O PCB on a safe, anti-static surface.

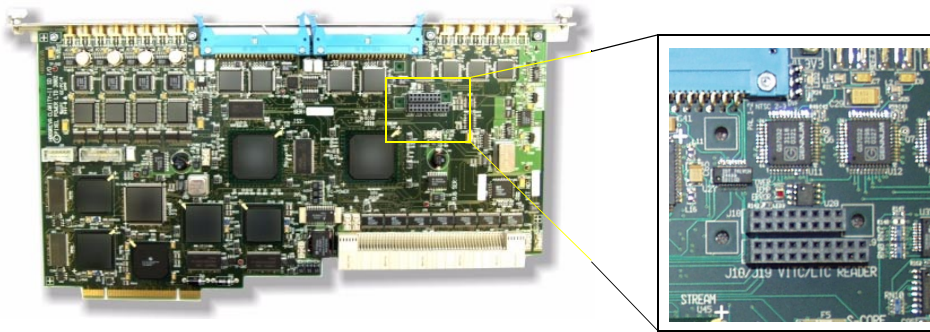
21.9.2.6 Fitting the H091 LTC Reader PCB

To fit the H091 LTC Reader PCB, follow the steps below:

1. Remove the H091 LTC Reader PCB from its anti-static packaging.
2. Remove and retain the screws from the three support pillars on the H091 LTC Reader PCB.
3. Locate the placement area on the H089 I/O PCB.

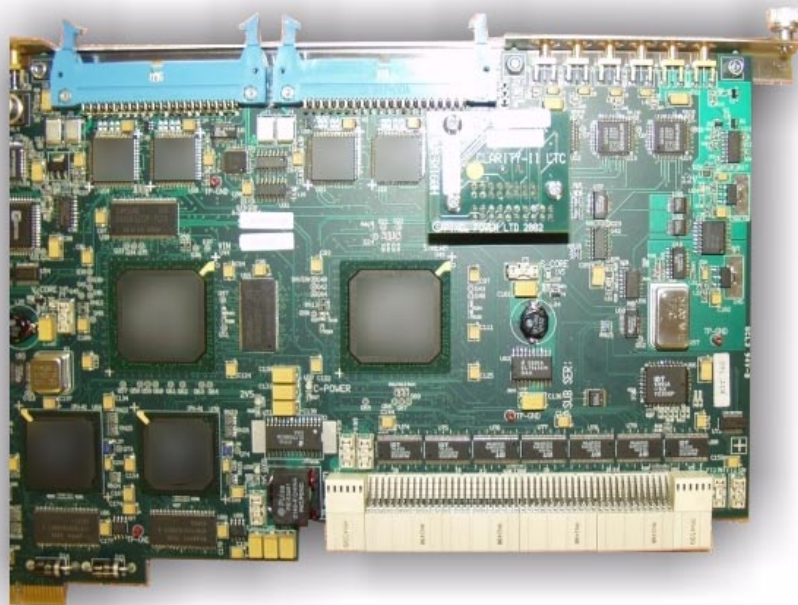
21. Performing Maintenance and Upgrades [CLARITY]

F-234 H089 I/O PCB | H091 LTC Reader PCB placement area



4. Align the three support pillars on the H091 LTC Reader PCB with the three holes on the H089 I/O PCB.
5. Gently push the H091 LTC Reader PCB into the two multi-pin sockets until the PCB is firmly seated.
6. Using the three screws retained in step 2, screw through the holes on the reverse side of the H089 I/O PCB into the three support pillars on the H091 LTC Reader PCB.

F-235 H089 I/O PCB | Fitted H091 LTC PCB



21.9.2.7 Re-fitting the H089 I/O PCB and chassis cover

1. Gently re-fit each end of the PCB into PCI (rear) and Signal Distribution (Video Backplane PCB) (H070/H094) sockets, then press firmly to seat the PCB.
2. Re-connect all H089 I/O PCB cabling.
3. Replace the chassis cover and then, using the Posidrive No.1 screwdriver, replace the 8 screws that secure the cover to the chassis.

21.10 Clarity 5000 STYLE A maintenance and upgrades

The following procedures are available:

F-236 Clarity 5000 STYLE A maintenance procedures

| Procedure | Details |
|---|--|
| H097 RS422/RS232 jumper configuration Configuration of the 9-pin standard density female D-type connector on the standard H097 Serial/GPI/GPO Status Monitor PCB that can be used either as an RS422 port for VTR/machine control or as an RS232 serial port. | Refer to “21.9.1 H087/H097 RS422/RS232 jumper configuration” on page 21.31 for more information. |

21. Performing Maintenance and Upgrades [CLARITY]

21.11 Generic Clarity maintenance and upgrades

The following procedures are available:

F-237 Generic Clarity maintenance procedures

| Procedure | Details |
|---|--|
| Installing Clarity system unit PCI device drivers | Refer to “ 21.11.1 Installing Clarity system unit PCI device drivers [CLARITY] ” on page 21.41 for more information. |
| Installing an optional Chaparral 2RU SCSI external storage unit | Refer to “ 21.11.2 Installing an optional Chaparral 2RU SCSI external storage unit ” on page 21.43 for more information. |

21.11.1 Installing Clarity system unit PCI device drivers

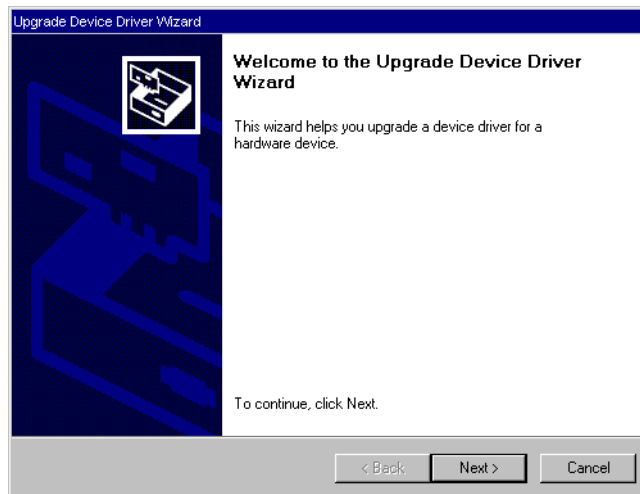
[CLARITY]

This procedure should only be read if you have added or replaced one or more Pixel Power PCI cards and you are using the Microsoft® Windows XP® 2000 operating system.

This procedure will enable you to properly oversee the installation of the correct Windows device drivers for upgraded Pixel Power PCI devices that have been added or exchanged within a Clarity system unit. The procedure assumes that you have already performed the physical hardware upgrade and are in a position to re-start the Clarity system unit.

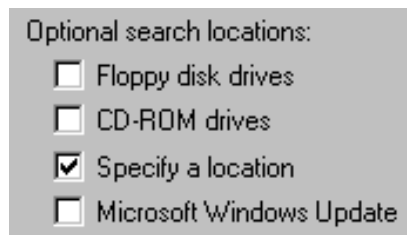
Upon re-start of the Clarity system unit, Microsoft Windows 2000 should automatically identify the new hardware and start the **Upgrade Device Driver Wizard**.

F-238 Upgrade Device Driver Wizard



This will enable you to locate the correct device driver files. Follow the on-screen instructions until you are asked whether you want to search for a chosen driver or let the operating system display a list of known device drivers. Make sure that you select to search. When selecting the optional search locations, make sure that you select to search in a specific location.

F-239 Optional driver search locations



As this point, specify the Driver folder within the root folder in which the Clarity software was installed (e.g. C:\Program Files\Pixel Power Ltd\CG Tools 4.3). The **Upgrade Device Driver Wizard** will search the specified location and install the correct device driver. This process has to be repeated for every individual device contained on a new PCI card.

After the first device is found, the search location changes to reference the operating systems' own copy of the specific file (name ending in e.g. oem1.inf).

After completing the device driver installation, the **Upgrade Device Driver Wizard** will ask whether you want to re-start now or later. We suggest that you re-start the Clarity system unit straight away to check that the new devices run correctly upon re-start. On rare occasions, upon re-start of a Clarity system unit, Windows 2000 may again highlight that a new hardware device has been located and start the **Upgrade Device Driver Wizard**. Follow the aforementioned procedure to complete the upgrade.

21. Performing Maintenance and Upgrades [CLARITY]

To check that all Pixel Power hardware devices are running correctly, see the **Device Manager** dialog box. This can be displayed by selecting **System** from the Control Panel and then selecting **Device Manager** from the **Hardware** control tab of the **System Properties** dialog box.

21. Performing Maintenance and Upgrades [CLARITY]

21.11.2 Installing an optional Chaparral 2RU SCSI external storage unit

21.11.2.1 Notes

This section details the procedure that should be performed when installing a Chaparral 2RU SCSI external storage unit to Clarity 2U, 3U and 5U system units.

To learn more about Chaparral 2RU external storage units, refer to [“18.1.2 Chaparral 2RU external storage”](#) on page 18.2 for more information.

This section does not document the physical installation of a Chaparral 2RU SCSI external storage unit into a rack mount location. Refer to the installation documentation that accompanies the relevant rack or bracket mount kit.

Each Chaparral 2RU SCSI external storage unit is pre-configured before being shipped and as such no Chaparral low level RAID/ARRAY configuration and/or management is necessary for the unit to be used in conjunction with a Clarity system. You will however, be required to view volume status using the Clarity system software and test clip playback. This is documented in this procedure.

21.11.2.2 Required tools

The following tools are required:

F-240 Tools required

| Tool | Illustration |
|------------------------|--------------|
| Flat blade screwdriver | N/A |


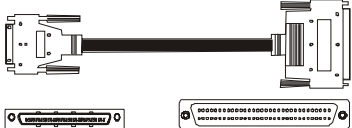
If you are rack/bracket mounting an Chaparral 2RU SCSI external storage unit, you will additionally require the necessary tools as specified by the installation documentation that accompanies the relevant rack or bracket mount kit.

21.11.2.3 Supplied parts

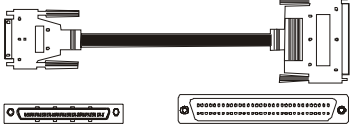


Below is a list of supplied parts. Prior to the initiation of the upgrade, please check the parts received against the list. If anything is discovered missing, contact Pixel Power for assistance.

F-241 Parts required

| Quantity | Part | Illustration | Clarity system unit | | |
|----------|--|--|---------------------|-----|-----|
| | | | 2U | 3U | 5U |
| 1 | Chaparral 2RU SCSI external storage unit |  | YES | YES | YES |
| 1 | 68-pin male VHDCI to 68-pin male VHDCI cable |  | YES | YES | NO |

21. Performing Maintenance and Upgrades [CLARITY]

| Quantity | Part | Illustration | Clarity system unit | | |
|----------|--|--|---------------------|----|-----|
| | | | 2U | 3U | 5U |
| 1 | 68-pin male HD D-type to 68-pin male VHDCI cable |  | NO | NO | YES |

21.11.2.4 Rack mounting (optional, rail)

1. If you are rack mounting a Chaparral 2RU SCSI external storage unit, ensure that there is adequate rack space available and you have the necessary tools and applicable rack mount kit (*Chaparral part number* CHARRACKSUAREKIT).
2. Follow the installation instructions supplied with the rack or bracket mount kit.

21.11.2.5 System unit and Chaparral 2RU SCSI external storage unit preparation

1. Refer to “[21.2.3 Safety steps before working](#)” on page 21.2 for more information.
2. Ensure that you have un-restricted access to the rear panels of both the Clarity system unit and the Chaparral 2RU SCSI external storage unit.
3. Make sure that the Clarity system unit and Chaparral 2RU SCSI external storage unit are turned off.

21.11.2.6 What type of Chaparral 2RU SCSI external storage unit have I ordered?

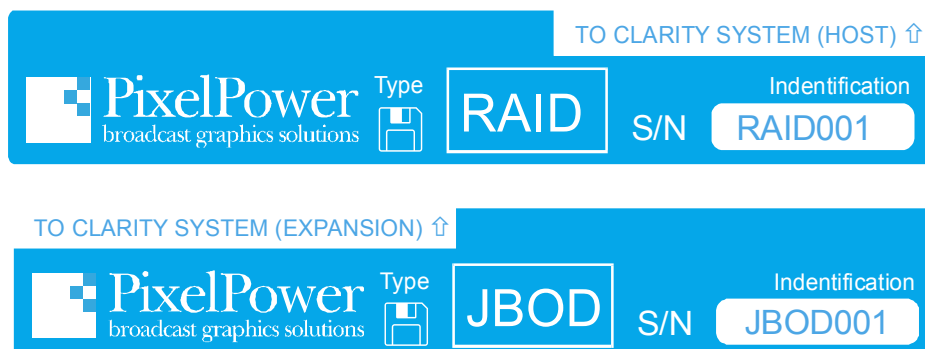
The specification of the Chaparral 2RU SCSI external storage has a bearing on how it is connected to a Clarity system unit.

You will have received a unit with a storage convention that matches either of the following:

- a) JBOD (Just a Bunch Of Disks), offering RAID 0 compliance (striping), but pre-prepared for optional RAID 5 compliance using an optional RAID controller upgrade.
- b) Full RAID 5 compliant storage system featuring the optional RAID controller.

The storage convention is indicated by the blue label on the rear panel. The identification number shown is used as the post factory volume reference in the CG Tools software interface. Refer to “[18.11.1.4 External storage volume naming conventions](#)” on page 18.16 for more information.

F-242 Chaparral rear panel storage convention and identification label

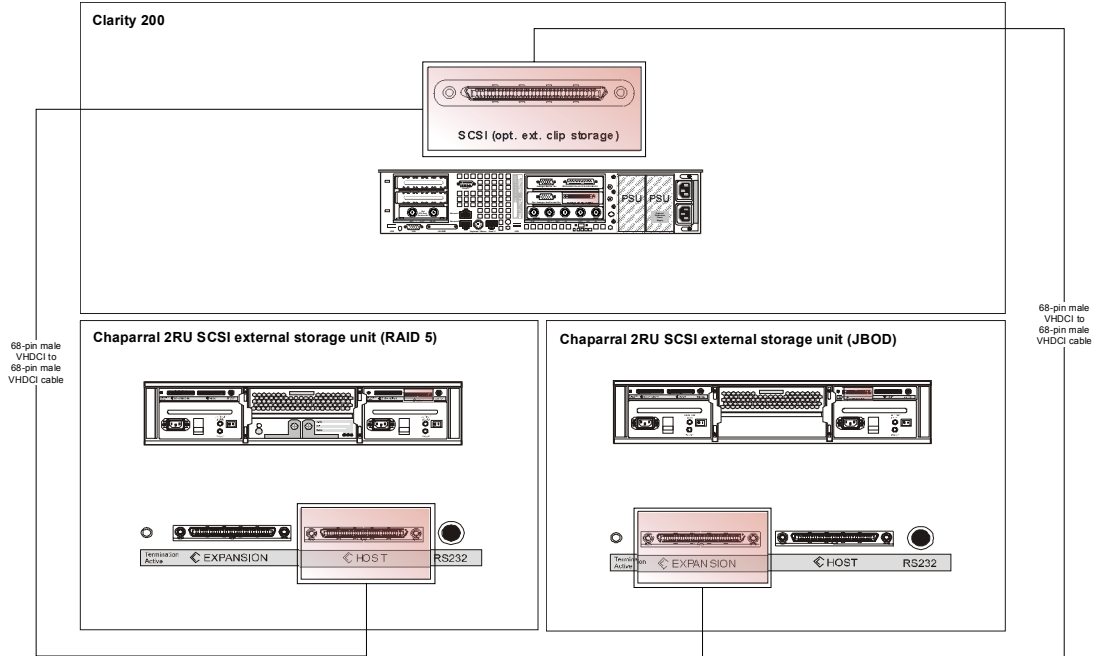


21. Performing Maintenance and Upgrades [CLARITY]

21.11.2.7 Connecting the Chaparral 2RU SCSI external storage unit to 2U systems

Connect the Clarity 200 system unit and Chaparral 2RU SCSI external storage unit (RED), depending on the given storage convention. Use a flat blade screwdriver to ensure that the connectors are fully seated, thus reducing the possibility of disconnection after installation.

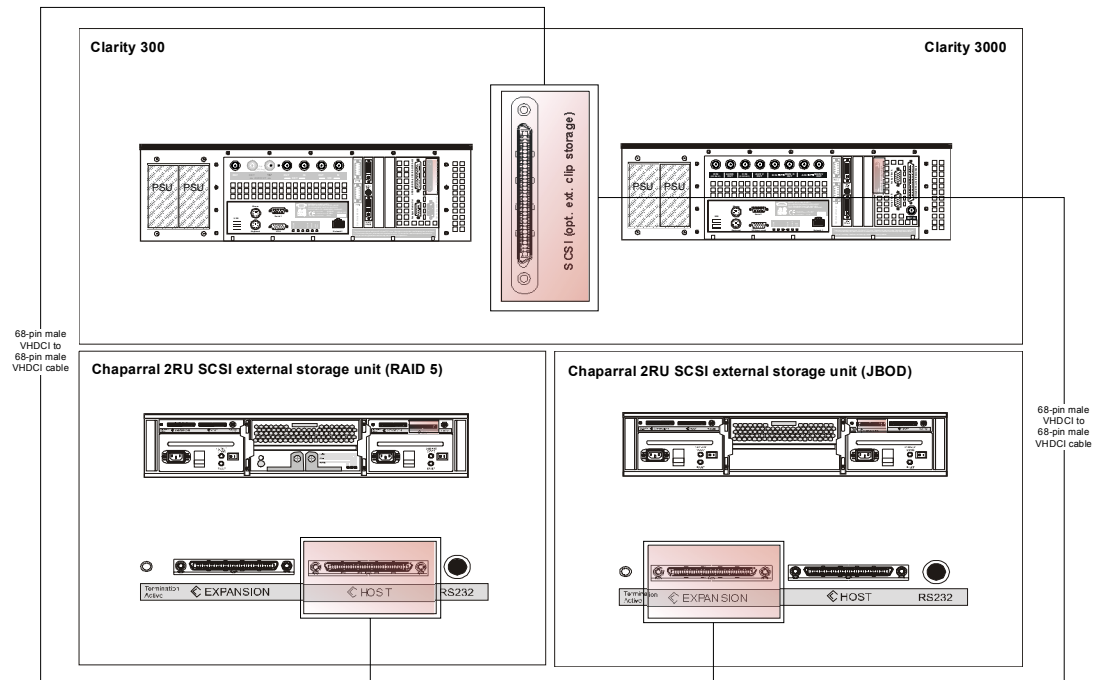
F-243 Connecting a Chaparral 2RU SCSI external storage unit to 2U systems



21.11.2.8 Connecting the Chaparral 2RU SCSI external storage unit to 3U systems

Connect the Clarity 300 system unit or Clarity 3000 system unit and Chaparral 2RU SCSI external storage unit (RED), depending on the given storage convention. Use a flat blade screwdriver to ensure that the connectors are fully seated, thus reducing the possibility of disconnection after installation.

F-244 Connecting a Chaparral 2RU SCSI external storage unit to 3U systems



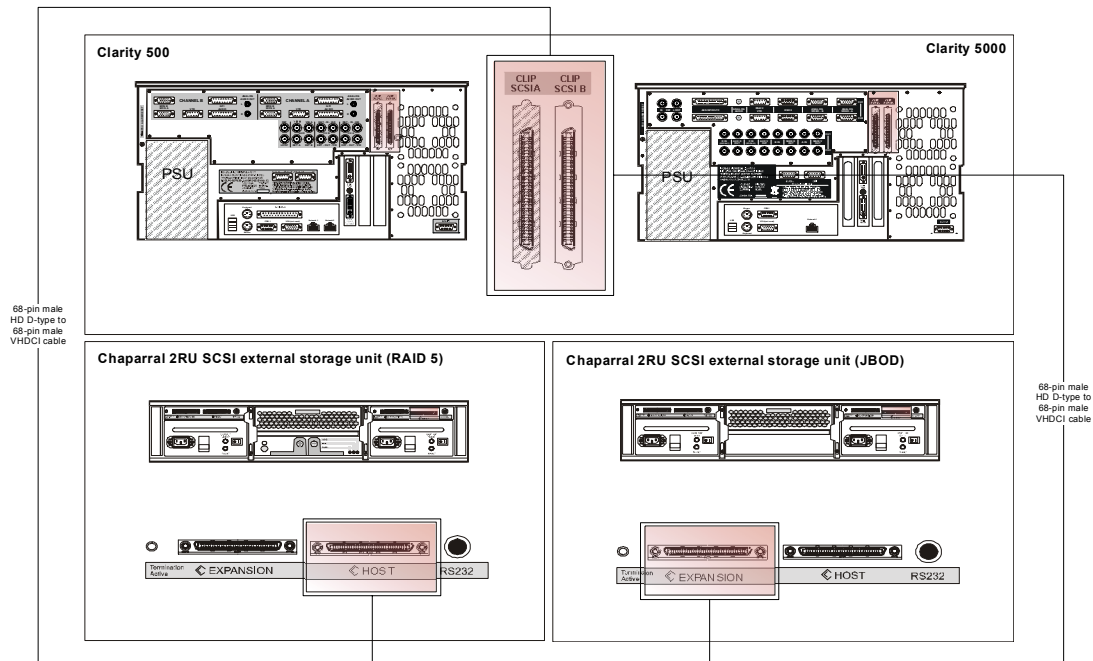
21. Performing Maintenance and Upgrades [CLARITY]

21.11.2.9 Connecting the Chaparral 2RU SCSI external storage unit to 5U systems

Connect the Clarity 500 system unit or Clarity 5000 system unit and Chaparral 2RU SCSI external storage unit (1) (RED), depending on the given storage convention. Use a flat blade screwdriver to ensure that the connectors are fully seated, thus reducing the possibility of disconnection after installation.

If the system has the internal clip option installed, only the **CLIP SCSI B** 68-pin HD D-type connector will be available and you should use this connector to connect the Chaparral unit; otherwise, connect the cable to the **CLIP SCSI A** connector.

F-245 Connecting a Chaparral 2RU SCSI external storage unit to 5U systems



21.11.2.10 Connecting and powering up the Chaparral 2RU SCSI external storage unit

The Chaparral 2RU SCSI external storage unit must only be operated from a power supply input voltage range of 100 - 120/200 - 240 VAC. Do not operate the storage system until the ambient temperature is within the specified operating range.

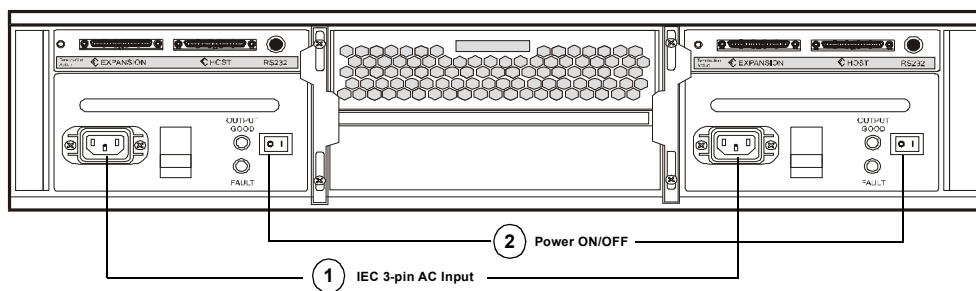
If the hard drives have been recently installed or the unit has been shipped over a long distance, ensure that the hard drives have had time to acclimatize before operating them. Before powering up the enclosure, please ensure that all rear modules (PSU, SCSI and optional RAID) are firmly seated in their correct bays.

1. Connect the power supply to the Chaparral 2RU SCSI external storage unit (1)
2. Apply AC power to the unit. Turn both of the power supply modules to ON (2).
3. All LED's on the ESI/OPS panel should be lit (GREEN) when the unit power is activated (the disk drive motors should start). Refer to [“21.11.2.11 Chaparral 2RU SCSI external storage unit front ESI/OPS panel LED's”](#) on page 21.47 for more information.

If main power is lost for any reason, on restoration of power the unit will re-start automatically.

21. Performing Maintenance and Upgrades [CLARITY]

F-246 Chaparral 2RU SCSI external storage unit power connection/switching

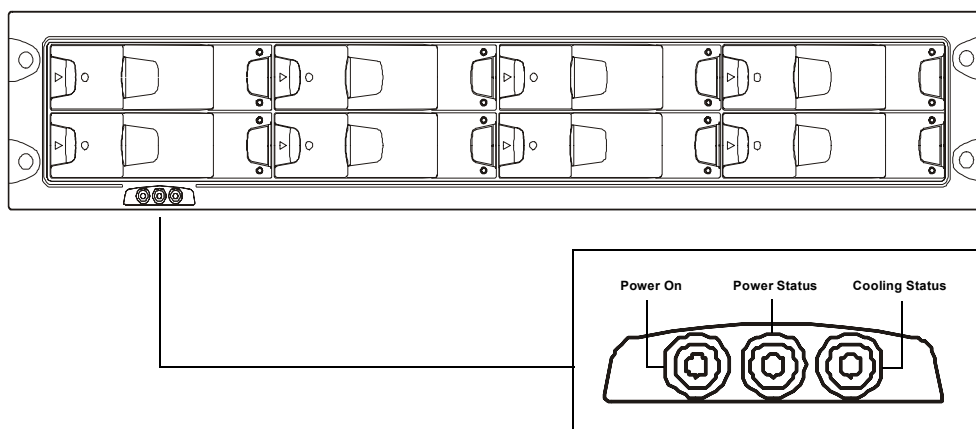


The central panel is for the optional RAID controller module, only present on Chaparral 2RU SCSI external storage units that feature optional RAID 5 compliance. On systems that feature RAID 0 compliance (i.e JBOD), this panel is blanked.

21.11.2.11 Chaparral 2RU SCSI external storage unit front ESI/OPS panel LED's

The ESI/OPS panel LED's are shown below. Under normal conditions, the LED's should all be illuminated constant green. If a problem is detected, the ESI processor will change the colour of the relevant LED to amber. Contact Pixel Power support if this occurs.

F-247 Chaparral 2RU SCSI external storage unit ESI/OPS panel LED's



T-102 ESI/OPS Panel LED Status

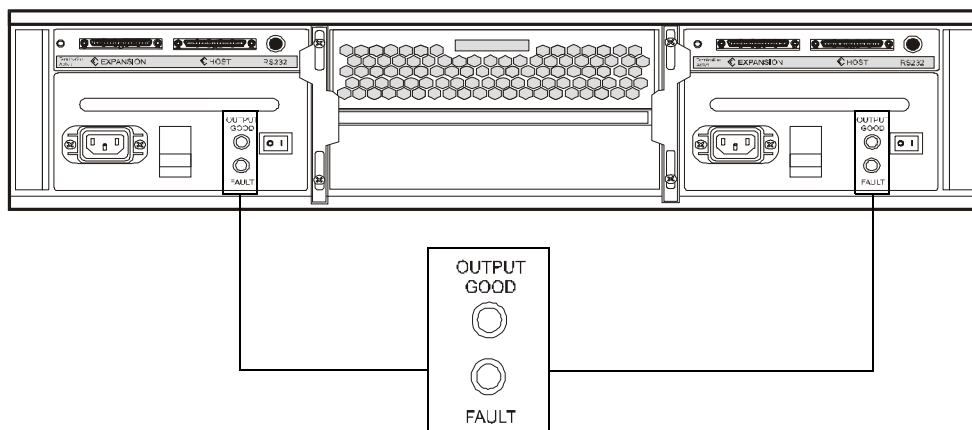
| LED | Normal Status | | Fault Status | |
|------------------------------|---------------|---------------|------------------------|---------------------------------|
| | Colour | Description | Colour | Description |
| Power On/System Fault | Green | Power to unit | Amber Amber (FLASH) | ESI PIC failure RAID failure |
| Power Status | Green | Power OK | Amber | PSU fault in dual powered unit |
| Cooling Status | Green | Cooling OK | Amber | Fan fault |

21.11.2.12 Chaparral 2RU SCSI external storage unit rear panel PSU module LED's

The rear panel PSU module LED's are shown overleaf. Under normal conditions, the Output Good LED should be constantly illuminated green. If a problem is detected with a PSU module, the Fault LED will illuminate constant amber. Contact Pixel Power support if this occurs.

21. Performing Maintenance and Upgrades [CLARITY]

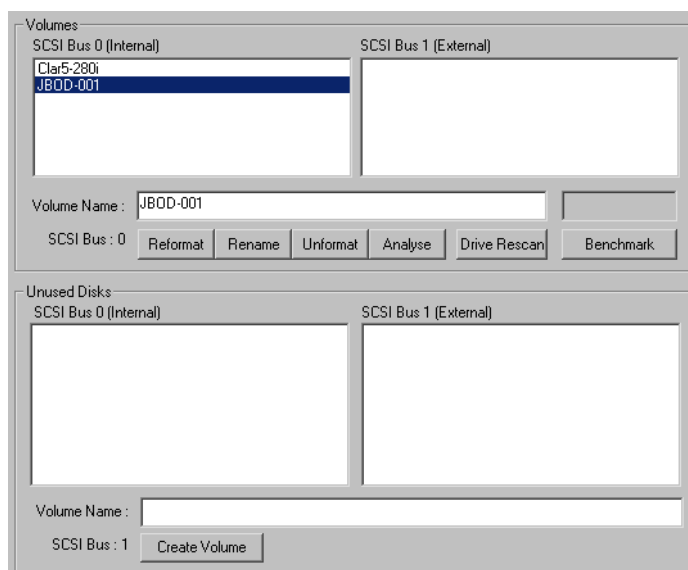
F-248 Chaparral 2RU SCSI external storage unit rear panel PSU module LED's



21.11.2.13 Powering up the Clarity system unit and CG Tools software configuration

1. Power up the Clarity system unit and start the Clarity software in the normal manner.
2. Select **Options>Local Preferences**. The **Local Preferences** dialog box is displayed.
3. Select the **Clip Store** dialog tab.
4. The new drive volume should appear in the **SCSI BUS 0 (Internal)** list box. The picture below shows a connected JBOD volume alongside an internal clip store volume (Clarity 500).

F-249 Local Preferences dialog box | Clip Store dialog tab



If desired, you can perform volume analysis and benchmarking using the **Analyse** and **Benchmark** buttons. To learn more about volume maintenance, refer to [“18.11 Clip storage management and configuration”](#) on page 18.15 for more information.

21.11.2.14 Testing clip playback

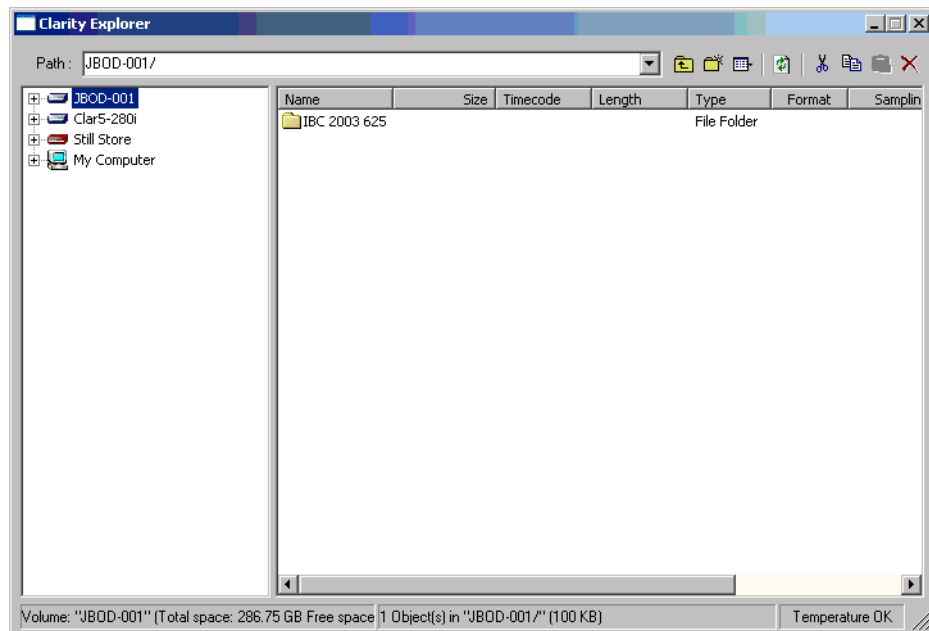
To preview the test clip loaded onto the volume during factory preparation, follow the steps below:

1. Select **File>Clarity Explorer**. The **Clarity Explorer** is displayed. Notice that the volume name (e.g. JBOD-001) matches the identification blue label on the rear panel (refer to [“F-242 Chaparral rear panel storage convention and identification label”](#) on page 21.44 for more information.)

2. Browse to the following folder:

<volume name>/IBC 2003 625

F-250 Clarity Explorer | Test clip folder location



3. Select the **Finance1** video clip.
4. With the clip selected, right-click and select **Preview** from the shortcut menu that appears. The video clip should preview on the connected output monitor.

21. Performing Maintenance and Upgrades [CLARITY]

22. Support

22.1 Information required when contacting support

Whenever you contact Pixel Power for support, please have the following available (is applicable):

- Product name and software version number (accessed using **Help>About**).
- Please supply the serial number located on the system unit rear panel.
- Precise description of the problem and any solutions that you have attempted.
- Exact wording of any error messages displayed.

22.2 Contacting Pixel Power for support and other enquires

Pixel Power has dedicated technical support engineers who provide support during office hours. Most technical support queries are resolved with a short telephone conversation.

| | UK technical support | US technical support |
|----------------------|---|---|
| Address: | Pixel Power Ltd. College Business Park Coldhams Lane Cambridge CB1 3HD ENGLAND | Pixel Power Inc. 1000 W. McNab Pompano Beach FL 33069 USA |
| TEL: | +44 (0) 1223 721000 | +1-954-943-2026 |
| FAX: | +44 (0) 1223 721111 | +1-954-943-2035 |
| EMAIL: | support@pixelpower.com | support@pixelpower.com |
| Office Hours: | 8.30am - 6pm GMT Monday - Friday | 9am - 5pm EST Monday - Friday |

22.3 Pixel Power on the internet

Our website contains wealth of information in a variety of sections.

<http://www.pixelpower.com>

22.3.1 About Pixel Power

To learn more about Pixel Power's history and emergence as a supplier of powerful, multi-functional and inter connective graphics solutions, see the following page on our website:

<http://www.pixelpower.com/about.html>

22.3.2 Distributors

To locate your nearest distributor, see the following page on our website:

<http://www.pixelpower.com/distributors.html>

22.3.3 Downloads and software release information

To keep your system up-to-date with new features and performance enhancements, see the following page on our website:

http://www.pixelpower.com/resources_downloads.aspx

22. Support

This area also features release notes for previous versions of the CG Tools version 7 software.

22.3.4 Freelancers

To locate Clarity systems professionals who can provide expert assistance for special events or urgent projects, see the following page on our website:

http://www.pixelpower.com/resources_freelancers.aspx

22.3.5 Mailing list

Be the first to learn about new features, software releases and upgrades without having to access our website. Once on our list you will receive occasional newsletters, press releases, product announcements, etc. via e-mail.

<http://www.pixelpower.com/products.html>

IMPORTANT

We respect your privacy. This list is exclusively for use by Pixel Power and will not be distributed to other vendors.

22.3.6 News

To catch up on the latest information regarding Pixel Power, Clarity and CG Tools product news, see the following page on our website:

<http://www.pixelpower.com/news.aspx>

22.3.7 Press resources

To see the latest press releases and press resources (images etc.) plus press contacts, reference sites and partner information, see the following page on our website:

http://www.pixelpower.com/about_press.html

22.3.8 Product demos

To see off-air examples (master control & branding, sports, audience interactive etc.) of Clarity graphics and demonstrations of specific features, see the following page on our website:

http://www.pixelpower.com/products_demo.aspx

22.3.9 Product information

To see more information about the Clarity and CG Tools range of products, see the following page on our website:

http://www.pixelpower.com/products_product_info.html

22.3.10 Support

Our website features a software support section where you can obtain information about training, submit casual software support queries, view frequently asked questions and download software updates. There is also an product registration page that will enable to you register your product online.

For more information about these services, see the following page on our website:

<http://www.pixelpower.com/support.html>

22.3.11 Training

To find out more about face to face training and access online tutorials to demonstrate the rich functionality of our products, see the following page on our website:

http://www.pixelpower.com/resources_training.html

Pixel power training courses are presented by expert training staff that have an in-depth knowledge in the use and application of the complete range of Pixel Power products. Training may be presented on-site at your own premises or at the Pixel Power offices in Cambridge, UK or Pompano, FL USA. Our experienced training staff guarantee a friendly and relaxed atmosphere.

Macromedia® Flash® based online tutorials allow users to learn at their own pace about specific real-world tasks.

http://www.macromedia.com/shockwave/download/download.cgi?P1_Prod_Version=ShockwaveFlash

22.3.12 User-to-User forums

The online support forums are available to any bona fide Pixel Power user with a valid software maintenance agreement. This includes all Pixel Power users during the first year after purchasing their Collage, Graphite, Clarity system or CG Tools software product.

To gain access to the online user support forums you will need a login ID and password. Please complete and submit the short form via the following link:

http://www.pixelpower.com/support_forum.html

Your login ID will be sent via email before the close of the next business day.

Freelance operators and those who are not otherwise an employee of a Pixel Power user site may request a login ID and password via an e-mail to support@pixelpower.com. Please state clearly the reason for your request.

Once we have confirmed your login ID and password via email, you can access the login page for the forums using the following address:

<http://pixelwww.pixelpower.com/cgi-bin/yabb/YaBB.pl>

22.4 Software anomalies and documentation errors

In spite of the extensive testing that all CG Tools software and documentation undergoes before release, we are realistic enough to admit that things are occasionally missed. If you believe you have found either

- a software error;
- an omission or error in any associated documentation,

then it is essential that you pass this information on to the technical support department at Pixel Power. Remember, if you do not tell us about these errors, then we are not able to fix them. If the software bug is serious enough to affect major software operations, then we are generally able to provide an intermediate version of software which fixes the problem.

22.4.1 Comments?

When using the CG Tools Reference (H059W004) in HTML Help format, you can comment on a particular topic easily if you have an internet connection available on the system on which you are viewing the help. There is a Comments hyperlink at the bottom of each topic. Click on this link to open a form where you can post comments about the selected topic. The internal HTML Help topic ID is automatically pasted into the form for your convenience.

This form is not intended as a way for you to receive feedback or technical support. The information you provide will be used to enhance future updates to the documentation.

22.5 Suggestions

Pixel Power always welcomes suggestions for new features and enhancements which wherever possible are incorporated into forthcoming releases. These should be communicated to the technical support

22. Support

department at Pixel Power directly or through the local distributor.

22.6 Spares

The local distributor will generally hold a selection of spares in stock. If you wish to provide your own spares holding, the distributor will be happy to advise on suitable spares and their prices.

22.7 Product warranty and support options

In the "Warranty and Support Options" section the back of this manual, you can find out more about the original equipment warranty, post warranty service options and pricing, training programmes and pricing and important information about returning your product for service or repair.

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